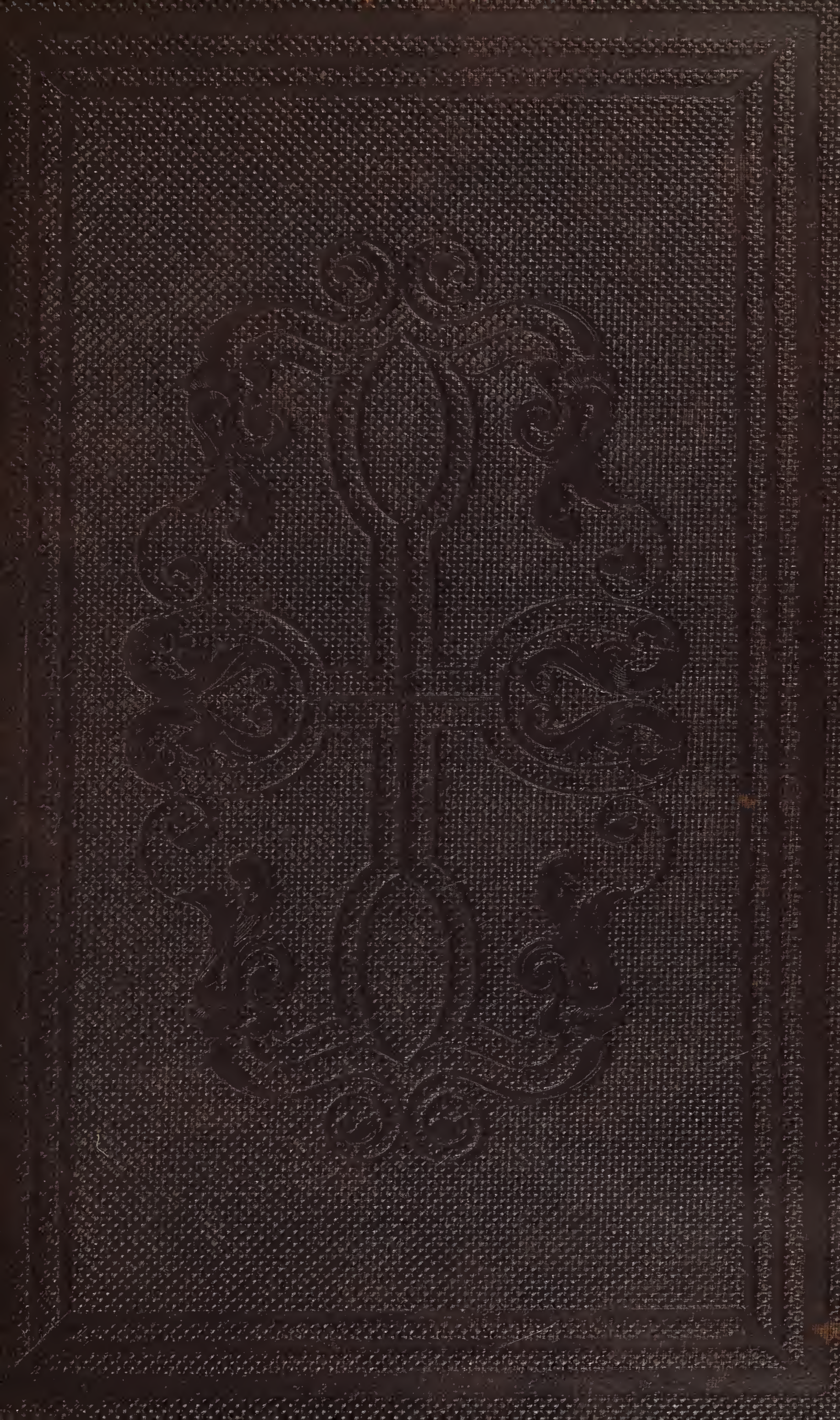

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COFFIN'S

BOTANICAL JOURNAL

AND

MEDICAL REFORMER.

"HUMAN EXPERIENCE, WHICH IS CONSTANTLY CONTRADICTING THEORY, IS THE GREAT TEST OF TRUTH."—DR. JOHNSON.

VOLUME IX.

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PREFACE TO THE NINTH VOLUME.

THE ninth volume of "COFFIN'S Botanical Journal and Medical Reformer" is brought to a finish. It contains such a fund of medical scientific information, produced by the devotion of much time, great research and care in the selection of the articles, all, we humbly think, bearing upon and corroborating the great principles of Dr. COFFIN'S Medico-botanic System of Medicine, combined with cases of successful treatment, useful vocabularies, experiments, as well as original articles, as will, the editor trusts, be duly appreciated by an extensive sale of the bound volume.

Still we deeply regret the lukewarmness, and, in some instances, the perfect indifference evinced by many whose zeal and energies in the furtherance, extension and circulation of the Journal, ought to be exerted to the utmost. They have been great gainers in a pecuniary view by their adoption of Dr. COFFIN'S system, have also gained fame, confidence and high respect through its practice; yet, notwithstanding all these advantages, they by no means support our Journal so strenuously as they ought, or as its merits deserve, for there is no publication of a medical character that contains so large a fund of valuable and varied information at anything like so low a price, if indeed at all. Thus much the editor says concerning the Journal, and challenges it to be gainsaid.

Upon a review of all that has passed in connection with our glorious system, we have much cause for congratulation. The various letters received from correspondents, who have to thank our system for their restoration to health, even after allopathic skill (pseudo skill) had signally failed, prove incontestably that

we are not only progressing rapidly, but making vast strides in the estimation of the public. Another cause for congratulation is the great increase of Dr. COFFIN'S patients, and the success that attends his practice. A third cause is the absolute defeat of every attempt made by our allopathic enemies to gain a conviction against any of our agents who have been cited before the coroner. Every manœuvre that malicious ingenuity could invent, backed by all the allopathic position and union that could be rendered available, has been brought into requisition against many of our agents; yet they failed, and all the obloquy redounded upon themselves, while all the honour and success were gained by our agents, and everything turned out to their advantage, except the inconvenience, expense and trouble they were so needlessly subjected to. On the other hand, our pages will show cases, not only of incompetency on the part of our allopathic enemies, but of downright carelessness, drunkenness, and convicted manslaughter, and, in our opinion, we might add crime of a deeper dye. Read the article, "Man-"slaughter by a surgeon," in No. 271, page 3, vol. 9, besides others in our Journal, and see whether these do not corroborate our assertions and opinion.

In reference to our tenth volume we assure our patrons, readers and friends, that there shall be no relaxation on our part to render it worthy the companionship of its predecessors; and we do hope for and anticipate the most cordial co-operation of all, and especially our agents, whom we would wish to furnish us with a list of cures performed by them every month, merely stating the date, age, name of disease, remedies used, and time of cure, the insertion of which in the Journal will redound to their benefit; and we do think that though they, through their committee, have styled Mr. Ford, of High Holborn, their esteemed treasurer, which implies an amount of high respect, and though they are well aware that the Journal is published at a considerable pecuniary loss, yet they will not only do nothing to support it, but actually reduce their orders: this really is not doing as they

would be done by, for if they took a dozen numbers extra to distribute gratuitously, it would much benefit them in the long run, and show they were earnest in the cause. Such a proof of sincerity would cost them only $4\frac{1}{2}d.$ per week; if, therefore, the esteem they hold their highly respected treasurer in be not worth this much, all we can say is, that it is an empty compliment, meaning nothing, and utterly worthless. We therefore trust that those who have been so much benefited by our system will exemplify their proper feeling by acting upon the above suggestion, and show to all that they are indeed earnest in the cause they profess.

134, *High Holborn.*

December 10*th*, 1859.

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AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 17.

CHARACTERISTICS OF DIFFERENT AGES.

INFANCY.

The condition of the human infant is essentially changed from the time of its entrance into the world. It is no longer supplied with nutriment by the direct transmission of organisable materials from the circulating fluid of the mother to its own; but obtains it by the processes of digestion, absorption and assimilation, which involve the establishment of new modes of vital activity in its own organism. In order, however, that the change may not be too sudden, the nutriment provided by nature for the early period of infantile life is such as to occasion the least possible demand upon its vital powers, for the preparation of the organisable material which is required for its further growth and development. But the transition is a most important one in another particular: the infant is now thrown in a great degree upon its own resources for the generation of its heat; and this it is enabled to accomplish by the combustion of a portion of its food, which is specially provided for the purpose, this combustion being promoted by the arrangement of that active respiration which now supersedes the very limited aeration of its circulating fluids, that was sufficient during fœtal life. In the movements of the respiratory muscles and of the walls of the alimentary canal, we have a new source of expenditure of vital force and of destruction of tissue; and this expenditure is progressively augmented, as the motions of the body and limbs become increasingly active. Thus we find that the formative powers are not exercised during infancy and childhood, solely in the *construction* and *augmentation* of the fabric (as they were during embryonic life), since there is a constant demand upon them for its *maintenance;* and this demand becomes greater and greater in proportion to the activity of the animal powers. These, at first called into exercise by the stimulus of sensory impressions upon the nervous system, are speedily brought into very energetic operation. This operation is of an extremely limited character, being at first purely *sensorial*, and for some time afterwards simply *perceptive*. But the *whole mind* (such as it is) being given up to it, *habits of observation* are formed, which are never subsequently lost; the infant learns how to use its organs of sense; and he also acquires those powers of *interpreting* their indications, which become so completely ingrafted into his nature as henceforth to seem a part of it. Although this education of the senses will necessarily go on even without any intentional assistance on the part of others, yet it is in the power of the mother or nurse to promote it effectually, by supplying objects of various kinds which the infant may look at and grasp; and by not abruptly interfering (by the too speedy withdrawal of such objects) with the process by which the visual and tactile perceptions are blended and harmonised. The nervous system of the infant, although thus called into extraordinarily energetic activity, cannot long sustain that activity: a very large measure of sleep is required for the restoration of its

speedily exhausted powers; and any unusual excitement of them tends to injurious disturbances of its nutrition. It is owing to this peculiar susceptibility of the nervous system of the infant to external influences, that medicines (especially narcotics) which exert a special influence upon that system, are so peculiarly potent in their effects at this period of life, that the greatest caution is needed in their administration.*

The most important developmental change which occurs in infancy after the complete establishment of the extra-uterine circulation is the completion and eruption of the first set of teeth; the greater part of their formation, however, has taken place before birth. These milk or deciduous teeth, twenty in number, usually make their appearance in the following order. The four central incisors first present themselves, usually about the seventh month after birth, but frequently much earlier or later; those of the lower jaw appearing first. The lateral incisors next show themselves, those of the lower jaw coming through before those of the upper: they usually make their appearance between the seventh and tenth months. After a short interval, the anterior molars present themselves, generally soon after the termination of the twelfth month, and these are followed by the canines, which usually protrude themselves between the fourteenth and twentieth months. The posterior molars are the last and most uncertain in regard to their time of appearance; this varying from the eighteenth to the thirty-sixth month. In regard to all except the front teeth, there is no settled rule as to the priority of appearance of those of the upper or under jaw: sometimes one precedes, and sometimes the other: but in general it may be stated, that whenever one makes its appearance, the other cannot be far off. The same holds good in regard to the two sides, in which development does not always proceed exactly the same.

The period of dentition is sometimes one of considerable risk to the infant's life; and this especially when an irritability of the nervous system has been brought about by unsuitable food, unwholesome air, or some other cause of disordered health. In such cases, the pressure upon the nerves of the gum, which necessarily precede the opening of the sac and the eruption of the tooth, is a fruitful source of irritation; producing disturbance of the whole system, and giving origin to convulsive affections which are not unfrequently fatal. In this stage it is of the utmost importance to attend to the general state of the system, change of air, and improvement of diet. In infants, whose general health is good, and who are not overfed, dentition is usually a source of but very trifling disturbance; a slight febrile action, lasting for a day or two, being all that marks the passage of the tooth through the capsule, and its eruption through the gum taking place without the least indication of suffering or disorder. Any existing malady is sure to be agravated during the cutting of the teeth, and it is therefore of the greatest consequence, that the infant should be withdrawn during this period from all injurious influences, and that no irregularity of diet, or deficiency of fresh air and exercise, should operate to its disadvantage.

(To be continued.)

* Dr. COFFIN repudiates their use altogether.

CORONER'S VERDICT

OF MANSLAUGHTER UPON A SURGEON.

THE "Durham Chronicle" of September 10th gives the following case:—A case, our opponents may exclaim, to use a common phrase indicative of gratified revenge, is "Nuts to us." To this we would reply, the faults and turpitude of others we do not gloat over: they are acts that excite our sorrow rather than either our pleasure or anger: all we can say to the victims of allopathy and instrumental surgery is, "Why will you die? Why will you die?" and especially when such a system as Dr. COFFIN'S Medico-botanical System of medicine is offered for your serious consideration—a system that indubitably works and harmonises with Nature's laws, is efficacious in the highest degree, and so simplified as to be within the comprehension of all; and we are sure, had any of our agents who practise midwifery such a case as the undermentioned in hand, rendered so deplorable by the malpractice, careless hardihood, and, ac-

cording to evidence given, drunken incapacity of a diplomatised practitioner, he would have brought it to a successful issue. We now give the proceedings of the inquest, leaving our readers to form their own opinion, assuring them that we shall watch the trial very narrowly, and comment upon it lucidly, truthfully, and unbiassed by anything but truth. For our own sakes WE will nothing extenuate, nor for the allopaths', set down aught in malice.

MANSLAUGHTER BY A SURGEON.

We alluded last week to certain rumours which had prevailed for some days past in the neighbourhood of Kelloe, with reference to the death of the wife of a pitman by the alleged unskilfulness of a surgeon. We may now state that the excitement produced by these rumours has been very great, and increased in intensity after the body of the woman had been interred. Statements of a peculiar character having come to the knowledge of the police, information was on Thursday last given to T. C. Maynard, Esq., coroner, and on Friday afternoon an inquest was held at the house of Mr. John Allison, Kelloe Vale, on the body of Martha Davis, aged 43, whose remains had been disinterred during the morning. The body was in an advanced stage of decomposition, and after being viewed by the coroner and jury it was re-interred as speedily as possible, in Kelloe churchyard. The evidence adduced turned chiefly upon points of surgical skill, and the state the operator was in at the time, and the result was a verdict of manslaughter against Mr. McHugh, surgeon. We have no desire to prejudice the case, either on one side or the other, by giving currency to anything we may have heard respecting it, and we content ourselves with simply giving the details of the evidence sworn to by the witnesses at the inquest.

Robert Ives, the first witness called, said he was a surgeon at Garmondsway-Moor, and was an assistant to Mr. Carnes, surgeon, of Coxhoe. On Tuesday morning week, between five and six o'clock, a message came to him to attend the deceased, Martha Davis, wife of John Davis, a pitman, living at East Hetton. He went to the house about twenty minutes to six, and found her in bed. She had just been seized with the pains of labour. He examined her, and found everything going on favourably, though the pains were weak and inefficient. He remained with her nearly two hours, and finding that he could be of no use at that time, he left her. He returned between three and four o'clock in the afternoon, when he found there had been a little progress, but matters were going on very slowly. After remaining with her a short time, he again left her, and returned between four and five o'clock. He found her in much the same state, and she was not suffering much pain. He prescribed for her about three quarters of a grain of opium to be taken in something thick, and again left her, with an intimation that she was to send for him again when the pains became stronger. There were several women present at the time. He was sent for during that night or early in the morning of the following day. Everything was going on favourably, but the labour was not sufficiently advanced to require that he should stay with her. Between three and four o'clock in the afternoon, he visited her again, and found her in much the same state. He remained with her about an hour. The pains were about the same as they had been previously, weak and inefficient, and very short. Both at that time and previously, he had found the child to be in a right position. Considering that sleep would be of service to the woman, he prescribed another dose of opium, but it did not produce sleep. He did not consider that there was any danger up to this time, and he left, telling Mrs. Davis that he could be of no use to her until the labour was further advanced. About six o'clock he was sent for again, and found that things had improved. He remained until seven o'clock. All seemed progressing well, but deceased was very impatient, and asked him if he could not deliver her. He told her it was a case which required time, and that she must be patient. He remained a little time longer, and, finding the woman becoming more impatient, he told her he would go for Mr. Carnes, and if he considered it right to use instruments, it should be done. This she agreed to, and witness went for Mr. Carnes. It was then about seven o'clock, and he

found Mr. Carnes from home. He took back with him Mr. Carnes's short forceps. He found the woman in much the same state as when he left her. Still he did not consider there was any danger. She then wished very much to be delivered immediately, and he used one blade of the forceps with the view of helping her. After he had done this, the pains became stronger and longer. He found he could not deliver her with the forceps, and he determined not to use them farther. From appearances he observed, he believed she might eventually be delivered without their use. He waited about half hour by the deceased's bedside, when he received by Mrs. Powell a message from Mr. McHugh, intimating that if there was anything in the labour which he (witness) could not accomplish, he (Mr. McHugh) would assist him. He knew Mr. McHugh was a surgeon, and witness sent word that he did not then need any assistance, but if he did he would send for him. Deceased heard the message, and expressed a strong wish to have Mr. McHugh directly. Witness told her that if she would have patience all would be well, and she would be safely delivered. She still insisted on seeing Mr. McHugh, and at her request witness sent for him. He found him at his lodgings, at Mr. Powell's, a public house in East Hetton. This would be about nine o'clock. Mr. McHugh returned with him. Witness did not examine the woman then, but she seemed to be in exactly the same state as she was when he left her. Mr. McHugh examined her, and proposed performing the operation of craniotomy, but witness did not recollect that he made any comment at all. He considered the case was then taken out of his hands, not by Mr. McHugh, but by the deceased herself. Mr. McHugh asked witness if he would perform the operation, but he declined doing so. He did not state any reason for his declining, although he did not consider the operation necessary. Up to that time he did not consider the life of Martha Davis to be in danger, but, on the contrary, he was satisfied that she would eventually be delivered without the use of instruments. Her pulse was excellent at that time, and Mr. McHugh remarked that it was so as soon as he felt it. Deceased then particularly requested Mr. McHugh to perform the operation which he had recommended, saying she would rather have to pay a double fee and let him do it, than let witness do it. Mr. McHugh then proceeded to perform the operation. Immediately after he had used the perforator (an instrument like a pair of scissors with short blades and long handles, used for opening the head of a child to allow of its being compressed) bleeding to a large extent took place. Mr. McHugh used the perforator several times after that. Mr. McHugh then used the blunt hook to bring the child away. Deceased became very faint from loss of blood, and witness administered to her about a teaspoonful of brandy, and dashed cold water in her face. Her pulse would at this time, as far as he could judge, be between fifty and sixty. Mr. McHugh then used the perforator again, and asked witness to assist him in separating the blades, which he did, using very little force. The bleeding was still going on. The perforator was taken out, and immediately afterwards introduced by Mr. McHugh, who made use of the observation, "I'll crucify the child," or words to that effect. The blades of the perforator were then opened to their widest extent, and forced further in, immediately after which bleeding to a large extent took place, and deceased died almost immediately. Witness had been in practice on his own account about eighteen months, and had several times been present when the operation of craniotomy had been performed. He was of opinion that much greater force had been used in performing the operation in this instance than was necessary. He had not himself performed the operation, but he had assisted in doing so. He would in all cases avoid using it until every other means had been tried. When Mr. McHugh was trying to extract the child, witness heard him say, "d—n the devil, why can't I deliver this woman?" Just before the woman died, he said, "Christ, she's a dead one!" During different parts of the operation he made use of similar expressions. Witness was positive that he did no injury by making use, in the manner he had stated, of one side of the forceps. Yesterdy week, he

was present at the *post-mortem* examination of the body of deceased. There was a child in the womb in its natural position. There was a laceration or tearing of the womb, through which Mr. Carnes took out the child. That laceration could not have been made without extreme violence. It had been done by the perforation of the blunt-hook. The lower bowel of the deceased had also been punctured, or torn through by these instruments. There was also a puncture of a large blood-vessel in the pelvis, to which witness attributed the flowing of the large quantity of arterial blood. With ordinary care and skill those injuries could not have been produced. Witness did not consider Mr. McHugh to be perfectly sober when he first saw him. The operation of craniotomy requires great care and considerable skill. Witness did not object to Mr. McHugh performing the operation, because deceased insisted on his doing so. After he had commenced the operation, witness found he was not in a proper state to perform it. After the woman was dead, Mr. McHugh placed his hand on her abdomen, and said two or three times, "She is not with child at all." It would be quite an hour and a half between witness introducing one side of the forceps and the commencement of the operation by Mr. McHugh. After Mr. McHugh had perforated the child's head, he proposed performing the Cæsarian operation, which was never done after the child's head was perforated. In answer to Mr. McHugh, witness admitted that it was sometimes done when there was no chance of saving the child, in order to take the chance of saving the mother. On the *post-mortem* examination, witness did not observe any bone occupying the pelvis. After the operation, Mr. McHugh asked him to feel a mass of bone in the pelvis. He tried but could not do so. He did not try again, because he saw the woman was dying. Witness did not propose to perform the Cæsarian operation within five minutes of Mr. McHugh coming to see deceased.

Hannah Gibson, wife of Nathan Gibson, of East Hetton, pitman, said she knew the deceased, Martha Davis, who was forty-two years of age. Until Mr. McHugh was sent for, every attention had been paid to deceased by Mr. Ives. Witness had had eleven children, and Martha Davis had had thirteen children before this. Witness did not consider deceased to be in any danger until Mr. McHugh had commenced using the instruments. The labour was a lingering one, and witness considered her to be doing as well as any woman could be. It was at deceased's request that Mr. McHugh used the instruments. Mr. Ives advised that all should be left to nature, and he told deceased many times there was no danger if she would only have patience. Witness told her the same. Witness was present when Mr. McHugh came, and remained during the whole of the operation. Mr. McHugh appeared to use great violence in using the instruments. When he was trying to extract the child, and the blood was flowing, he turned round to the woman and said, "I don't think there's a child at all, or if there is, it's a d—d little one." Witness went home just as deceased was dying. Witness was positive Mr. McHugh was intoxicated when he first came in, and that was the reason she apprehended danger when he commenced to use the instruments.

Elizabeth Clay, wife of John Clay, of East Hetton, joiner, said she saw the deceased on Monday morning week. Deceased complained of being unwell. On Tuesday witness saw her again. She was in bed, and appeared to have a severe cold on her. Witness was with her all day on Wednesday, and she seemed to be going on very well. About four o'clock in the afternoon her pains became worse. Mr. Ives attended her until half-past ten o'clock, when Mr. McHugh was sent for by the deceased, who said she was confident he would deliver her soon. Mr. McHugh came, and felt her pulse, and said it was capital. He objected to use Mr. Ives's instruments, and sent for his own. He then proceeded to use them. Immediately after a large quantity of blood flowed. Mr. McHugh still persevered, and again used the instruments several times. In about half-an-hour after his arrival the woman was dead. When using the instruments he said, "There was no child there—d——d a one he could find." He afterwards said, "If there was

one it was a very small one." Witness had had fourteen children. Up to the time Mr. McHugh used the instruments, witness had no apprehension of danger. The spirits of deceased were very good. Witness had previously thought that the labour was going on very well, but that it was a lingering one. In her opinion deceased might have been safely delivered if the instruments had not been used. Witness had heard deceased say that she was delivered of her previous child by instruments. Mr. Ives did not wish the instruments to be used. Witness was out about an hour about this time, but she heard Mr. Ives tell Mrs. Davis repeatedly that if she would have patience she would be safely delivered without instruments. Witness thought Mr. McHugh was rather intoxicated when he came. Witness did not think the labour pains of deceased actually came on until four o'clock on Wednesday afternoon. Witness, on being interrogated by Mr. McHugh, said she was not aware that he asked for a *post-mortem* examination. Witness did not hear him wish for a *post-mortem* examination, and ask Mr. Carnes to have an inquest.

Barbara Griffith, wife of Henry Griffith, of East Hetton, pitman, said, on Wednesday week, she was sent for to Martha Davis, and found her in labour. She expressed a strong wish to have Mr. McHugh. Some of the women said he was drunk, and others said he could do as well tipsy as sober. Deceased then determined she would have him. Mr. Ives, who was attending her, said he could do nicely himself, but as she wished it he would bring Mr. McHugh. He did so, and Mr. McHugh commenced using instruments to deliver her. Before doing so, he felt her pulse, and said it was capital. Immediately after the instruments were used, a large quantity of blood flowed. Mr. McHugh still continued to use the instruments, and in about twenty-five or thirty minutes the woman died. Witness heard Mr. McHugh say to Mr. Ives he was sure he had cut the child's skull in three part. He also said, "I'll be d——d if there is a child." Mr. Ives said he had felt the child distinctly, and Mr. McHugh replied, "If there is, it's a devilish little one." After the woman was dead, Mr. McHugh wished to take the child from her. Mrs. Liddell and the other women objected to his doing so, and her husband, on being referred to, refused to give his consent. Witness did not take much notice of Mr. McHugh, and could not say whether he was intoxicated or not. She was attending to deceased, and did not observe him particularly. Up to the time of the instruments being used, witness was of opinion that the labour was proceeding very well, and she did not apprehend danger.

John Carnes, of Coxhoe, surgeon, deposed that he made a *post-mortem* examination of the deceased. Mr. McHugh, Mr. Ives, Mr. Scott, and Mr. Wharton, and some women were present. Before commencing the examination, he asked Mr. McHugh what he thought they would find; and he replied, "rupture of the uterus and rickets" (disease of the bone of the pelvis). Witness asked him whether he supposed the rupture had been caused before or after the operation; and he said "before." Mr. McHugh opened the abdomen. There was no rupture to be seen; but, on turning the womb out, with the child in, witness observed a very extensive jagged rent near the neck of the womb. Out of this rent he took the child. It was a large, full-grown child. Witness also observed (besides other appearances which he described), a puncture in the right iliac artery. There was no blood, except from the placenta. There was a crucial operation in the head of the child, which appeared to have been done by the perforator. The gut of deceased appeared to have been torn by a blunt instrument. The tearing of the walls of the uterus and the perforation of the artery were, he had no doubt, the causes of death. These injuries could not have been caused by performing the operation of craniotomy, if ordinary care and skill had been used. Witness could not see how any operation, conducted with ordinary care and skill, could have caused the injuries which the *post-mortem* examination revealed.—In answer to Mr. McHugh, witness said he never was asked by him to saw across the pubic bone. Mr. McHugh sent for a saw. Before the *post-mortem* examination, Mr. McHugh said it would be necessary to

LOBELIA INFLATA.

Greenwood Delt

open the pelvis, and there the cause of death would be found. There were no rickets: the pelvis was fully formed. Mr. McHugh put his hand on the promontory bone of the sacrum, and asked him what it was. Witness told him it was the promontory of the sacrum. Mr. McHugh said it was nothing of the kind, and that that was the cause of death. Had there been such a protuberance as Mr. McHugh stated, it would have been an impediment to labour. Witness did not open the pelvis, because he had already seen beyond all doubt, what was the cause of death. Mr McHugh, if he had thought fit, could himself have opened the pelvis. He performed part of the *post-mortem* examination. Mr. McHugh said rickets was the cause of death.

William Scott, of Thornley, surgeon, said he was present at the *post-mortem* examination of the body of Martha Davis. He was not very well, and paid little attention to it. He observed considerable extravasation of blood at the base of the abdomen, and an aperture on the posterior part of the uterus from three to four inches in length; he saw the child taken out of it. Witness did not consider that it was the natural opening of the womb. He did not observe the right iliac artery, and he could not say whether it was punctured or not. The aperture in the uterus looked rather ragged. It might have been caused in the operation of craniotomy, but not if ordinary skill and care had been used. He thought the aperture in the uterus might arise from natural causes. The womb appeared perfectly healthy.—In answer to Mr. McHugh, witness stated that the rupture of the uterus might have arisen from its own exertion, and the largeness of the fœtus, together with rigidity of the *os uteri*. He did not examine the *os uteri*. He could not, from anything he observed, give any opinion as to the cause of death.

Mr. McHugh explained that when he stated he would "crucify" the child, he merely meant that he would make a crucial incision into the head. He denied that he had manifested any unskilfulness in performing the operation of craniotomy, and said there was a bony protuberance which rendered it impossible that the woman could have been delivered by natural means. He wished to give a full history of the case, but the coroner said, under the circumstances he could not take his statement on oath, and he advised him to reserve anything he might have to say. Mr. McHugh adopted this suggestion.

The Coroner having summed up, the jury retired about half-past nine o'clock. At half-past two, twelve out of the fourteen jurymen agreed to a verdict of manslaughter against William McHugh. The coroner then issued his warrant, and Mr. McHugh was given into the custody of Inspector Henderson, and on the same morning lodged in the Durham County prison, to await his trial at the next assizes.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

LOBELIA INFLATA.

Description.—Lobelia Inflata is a biennial herb,* indigenous to North America; grows from twelve to eighteen inches high. Its root is fibrous, its stem erect, solitary, hairy and angular; its flowers small, blue and pointed, and growing out of a round seed-vessel about the size of a small pea.

Time.—It flowers in July and August.

Place.—Common to all North America.

Qualities and Virtues.—It is one of the most powerful stimulants ever introduced into the human system. It acts specifically upon the liver, lungs, stomach and intestines. It is unequalled in female complaints, especially in difficult labours. It is a most powerful agent in extreme cases of fever, particularly typhus, conjoined with other stimulants; and when united with cayenne pepper, vervain, the vapour-bath and tonic medicines, it seldom fails to cure even the worst stages of consumption. It is decidedly the most certain and efficient emetic known, and safe in its operations, producing its specific effect without corroding the stomach, or irritating and inflaming the mucous membrane of that organ. Lobelia Inflata may emphatically be said to "operate in unison with the laws of life." No remedy

* "This plant has been hitherto considered an annual. The error has been shown by Dr. Coffin, of Troy."—*Professor Eaton's Manual of Botany.*

is so effectual in spasmodic disease: hence epilepsy, hysteria, and apoplexy are all relieved with remarkable promptness by its exhibition in emetic doses.

The tincture made with vinegar is the very best medicine for children, when attacked with croup, joined to some of the strong stimulants before mentioned; it has also cured many hopeless cases of asthma. When administered, care should be taken to give enough, so as to cause it to operate. A teaspoonful of the powdered leaves, pods, or seeds, may be given every half hour in a cup of vervain or pennyroyal tea, till it operates; when the emetic has fairly done its work, the patient may take such food as the appetite most desires.

To make the acid tincture.—Lobelia herb and seed mixed, two ounces; best white wine vinegar, one pint; infuse in a jar for fourteen days, then strain. Dose for a child, from one teaspoonful to a tablespoonful.

DR. COFFIN'S INVITATION TO AUSTRALIA.

In publishing the following letter to Dr. Coffin from Australia, we beg leave to state that it did not leave Melbourne till the 15th of July, it being too late for the post in April and June.

Dear Sir,—I write these few lines, hoping you are well, as, I am happy to say, self and Mrs. Court are at present.

I have now been in Australia just six years, and during that time have seen much of the murderous treatment of the doctors in the cure or attempted cure of disease, that has quite made my heart bleed, especially when I know that there is a balm in Gilead and a physician there—a cetain cure for all the diseases to which flesh is heir. But that balm and that physician are sixteen thousand miles away; and although many appeals have been made by myself to England on behalf of the suffering and murdered thousands of Australia, yet (would one believe it?) Australia is still without an advocate, still without an agent, of the valuable system of Medical Botany. Australia, with its 300,000 inhabitants, and no one to make known the valuable system which has saved its thousands, and tens of thousands from an untimely grave, and rejoiced the hearts and homes of myriads! England, France, America, from length and breadth, have seen and heard the great founder of Medical Botany, and every father in these lands who has heard and tried the system is now his own physician, and keeps his own chemist's shop, and has his "Guide to Health;" and also have these places each its hundreds of advocates to make known this precious system, and to instruct its hearers in its truths. England, France, America, are free. if I may use the idea; but Australia, north, south and west, are bound in fetters—still in the deadly fangs of the serpent allopathy. O doctor, doctor! what are you about? You have done wonders in England and other countries; you have made known the system; you have given lectures, until they must have been got off by heart; you have made multitudes of converts from the old system, who have now taken your place, and I think I may make bold to tell you plainly, I think your work is done in these places. Now it cannot be expected that you can live much longer; therefore, if you still have the same feelings for suffering humanity I have so often heard you express, come to Melbourne and lay the foundation stone of Medical Botany, and instruct the thousands here in its truths; for which they will have to bless your name. And may I have the pleasure of announcing you as coming this year, and of the twelve lectures you will give in the Mechanics' Institute, Collins-street, H. Court in the chair? You say in your "Guide to Health," in the commencing pages, "We know that the science of Medical Botany will ere long produce a complete revolution in the medical world." Quite true. But how is it to be done? (How shall they hear without a preacher?) I will leave the sequel with you. I heard you make a promise in Exeter Hall, to meet a friend who came from America to see you in ten years on that continent: six have passed away: suppose you come here for the four. I think that will be quite sufficient to take Melbourne by storm, and as much longer as you would like to remain. Since I have been here I have tried to do what I can, and there have arrived, and are

at present, a great number of Coffinites here; but are like sheep without a shepherd, and cannot obtain the herbs in our practice. I have but few things already. There is an order sent to Ford on my account for ten pounds' worth of herbs. Just twelve months is gone by, and no tidings of them. Now, doctor, I tell you, if you wish to die with a clear conscience, as having done your duty and fully improved the talents given you, you must come to Melbourne; and I hope this appeal to you will not be made in vain. And wish you health, and a speedy and safe passage.

Believe me to remain, yours truly,

HENRY COURT.

Prahran, near Melbourne,
April 15th, 1858.

BOTANIC HOSPITAL.

MR. EDITOR.—Sir,—A few weeks since you published a statement in your Journal, shewing the amount of cash in hand towards the establishment of a Botanic Hospital.

It would be folly to think of building with so small an amount; but if those persons who have promised their assistance and support would send in their names and the amount of their subscription and donation to you, it would afford means of judging the possibility of a sufficiency being obtained.

I would not advise *building* an Hospital, but would suggest the propriety of taking a house suitable for the purpose, near the City or toward the east end of London, till such time as funds justified the erection of an Hospital.

But as advice, sir, without help is almost useless, and not having much of this world's goods to spare, I cannot promise much, but would hold myself ready to pay on a week's notice the sum of five pounds, and a subscription of one pound per annum payable as most desirable.

I think, sir, as do most of our friends, that this institution is most desirable and very necessary, and should not be allowed to fall to the ground without more strenuous effort being made towards its establishment; and among the many who derive benefit from botanic remedies, and who reside in most of the large towns, &c. of this country, much might be done to lighten the ills of suffering humanity; and if you could find space, not for all this letter, but for my suggestion, with additional remarks from your pen, I think it would in some degree arouse Medical Botanists to do something to establish their name and usefulness in the attainment of this object, and let allopathists, &c., see that there is something in Medical Botany; and your publishing it would further advertise it, as there are still many who would contribute who do not know there is a fund for such purpose, as I was entirely ignorant of its existence till I saw it in the Botanical Journal.—I remain, yours very obediently,

A FRIEND TO DR. COFFIN'S SYSTEM OF MEDICAL BOTANY.

Mare Street, Hackey, September 8, 1858.

We give our Correspondent's letter in full. It is so much to the purpose, shews a just appreciation of the benefits that must accrue from the formation of an Hospital, and being feelingly alive to this, he nobly proffers his assistance in helping to furnish the means of carrying out this laudable undertaking. Let all the friends of Dr. COFFIN'S Medico-botanical System do likewise. Let them notify to us their desire to follow in the wake of our friend, and the business will soon be put in a train to complete what by their assistance can soon be auspiciously commenced.

MEDICAL EDUCATION.

(Continued from page 377, vol. viii.)

THE preceding episode in the history of the London College of Surgeons, which has its parallel in the history of the Dublin College of Surgeons, is an instructive illustration of the evils wrought by Government when not confined to the legitimate sphere of its activity. If it had never interfered with the free development of these Colleges, their administrators could never have become despotic; but, having empowered them to do so, the only way to remedy the evil is to remove its cause—to withdraw all Government authority. Then, unless the requisite reforms were effected, the commonalty of the College would rebel, secede, and establish a rival institution, democratic in spirit, and so far so in form as its members might find most expedient

for the administration of justice, and the elevation of the most scientific and skilful to positions of trust, honour, and emolument, according to their degrees of merit. We will now furnish a still more notable illustration of the evil of State interference, from the history of the London College of Physicians.

Considering both the letter and the spirit of the charter of the Royal College of Physicians, and of the Act of Parliament confirming it, it is obvious that the college was intended to be and to continue a corporation of equal fellows, comprehending all "*docti et graves viri*" actually practising, or about to practise, in London, and that all not included in the original act of incorporation were subsequently to be admitted, if, on examination, found competent. There is no word, either in the charter or confirmatory act, authorising the creation of a distinct body of London physicians merely licensed to practise—hence called Licentiates or Permissi—and debarred from fellowship of the college. This democratically constituted college, whose constituents were the most highly educated men of the time, was calculated to flourish vigorously (the noble principles which underlie a true democracy can only be wrought out by gentlemen), but the freedom of its growth was speedily restrained.

The first violation of the charter consisted in resolving that only graduates of Oxford and Cambridge were eligible for admission into the college; and as all graduates of those universities were obliged formerly to attest their adhesion to the creed of the English church, a religious test of eligibility of fellowship of a college devoted to science was thus virtually administered to all candidates; so that the first violation of the charter necessarily involved a second. As a matter of fact, the restriction chiefly operated injuriously in a religious and pecuniary way: during nearly the first two hundred years after the college was founded, graduates of foreign universities could easily obtain testimonials of admission, *ad eundem*, at Oxford and Cambridge, and thus, without residence, by signing the thirty-nine articles, and paying the customary fees, they become eligible for the fellowship of the London College.

The third violation of the charter effected a complete revolution in the constitution of the college, and inflicted upon it a deadly injury: at a very early period, probably about 1581, while graduates of other universities could still be incorporated at Oxford or Cambridge, a bylaw empowering the creation of a separate body of Permissi or Licentiates was enacted. These, after examination, and the payment of fifty-six pounds ten shillings, receive a license to practise in the metropolis, but are refused admission as fellows of the college. Thus the fellows became a more exclusive body, and constituted distinctions between themselves and the body of mere licentiates, greatly to their own personal advantage, and to the exactly proportionate injury of the licentiates. More pitiable contradictions than those in which the advocates of this selfish bylaw have involved themselves while seeking to defend it, it has seldom been our lot to witness. While recognising that the fellowship is an honour; that it is an evidence of literary and scientific education, and that the practice of a physician depends "in a degree" upon public opinion; and while alleging that the fellowship, because obtainable only after the candidate has taken a degree at Oxford or Cambridge, is also a proof of superior moral habits and character, Sir Henry Halford actually tells the Parliamentary Committee in almost the same breath, that the licentiate is not on a lower scale than the fellow, and that no injury is done to the former by refusing him the fellowship!

But the spirit of selfish injustice had not yet completed its incarnation. The college, in order to restrict the fellowship still further, wrote to the authorities of Oxford and Cambridge, reminding them of the favour which it had shewn the universities by limiting the admission into the fellowship exclusively to their graduates, assuring them of the benefits it was still anxious to confer upon them as to payments, and in every other way, and in return requested them to cease granting testimonials of incorporation, or *ad eundem* degrees, to graduates of other universities. Both Oxford and Cambridge acceded to the request, except only with respect to graduates of the University of

Dublin. The supply of candidates being now so effectually restricted that only graduates of Oxford or Cambridge were eligible for the fellowship, and that degrees could only be obtained from those universities, either after being enrolled as students there for eleven years, or by first graduating in Dublin, there seemed to be not a single barrier left to arrest the college in its suicidal course: in 1682 the number of fellows, honorary fellows, and licentiates, taken altogether, had dwindled to ninety. From 1647, if not earlier, until 1765, the practice of the college was to limit the fellows to a certain number: eighty and twenty were the maximum and minimum numbers definitely fixed by college statutes.

By a custom, laudable so long as the fellowship was on the broad basis of equity, all hospital appointments in London were given almost exclusively to fellows; these appointments were invaluable as means of acquiring professional experience, and of bringing their possessors prominently before the public, and thus of securing general practice. "The fellow, the moment he arrives from his studies," says Sir David Barry, M.D., "is placed in the first line of recommendation. He is placed on the same line with the President of the College of Physicians, and he is recommended by his fellows or associates, exclusively and in preference to licentiates; so much so, that there appears to be, if I dare use the phrase, something like a trade's-union among the fellows, to the exclusion of licentiates; and that is the case more particularly with regard to hospital appointments." In some of the hospitals there are rules according to which only fellows are eligible to become their physicians. In 1825, Dr. Copland, who was not a fellow, was a candidate for a physicianship of Middlesex Hospital, but discovered that it would be useless to go to the poll. "I found," he said, "in canvassing the governors, that the influence exerted for a fellow of the college by his associates had put success out of the question." Dr. James Johnson states that, "whenever the interest or interests of a fellow and a licentiate come into collision, which they frequently do, both in private practice and in canvasses for public institutions, the licentiate is sure to fail, through the *esprit de corps*, and the influence of the fellows, who always support each other."

Speaking of Dr. Hawkins, who was the successful rival of Dr. Copland in the canvass, from which he retired, Sir Charles Bell, who was a surgeon of Middlesex Hospital, says:—"He is introduced to us by one of those arrangements betwixt our physicians and those of other hospitals, by which two junior members of the College of Physicians are to be provided for;" and adds that the influence exerted by the college on such occasions "is so great and so extended, that no individual, however deserving, can prevail against it. Respectable men who are aware of it are deterred from appearing on the canvass. For they seem in the public eye to be fairly weighed in the balance against the very youngest members of their own profession; and they retire defeated, and with their characters lowered." . . . . "Bartholomew's Hospital has been for a long series of years," says Dr. Yelloly, "in complete possession of the College of Physicians. By the will of Dr. Baldwin Harvey, in the time of Charles I, the college was to recommend two physicians on any vacancy in the Hospitals of St. Bartholomew, Christchurch, and St. Thomas; and if the governors elected either, there was a certain small stipend to be paid to the person so elected."

(To be continued.)

In the course of time, society, merely by having included within it a small sprinkling of persons imbued with exact knowledge, has come to think correctly upon a great number of subjects, on which formerly the grossest errors prevailed.

CHARACTER.—The differences of character are never more distinctly seen than in times when men are surrounded by difficulties and misfortunes. There are some, who when disappointed by the failure of an undertaking from which they had expected great things, make up their minds at once to exert themselves no longer against what they call fate, as thereby they could avenge themselves upon fate; others grow desponding and hopeless; but a third class of men will rouse themselves just at such moments, and say to themselves, "the more difficult it is to attain my ends, the more honourable it will be;" and this is a maxim which every one should impress upon himself as a law. Some of those who are guided by it, prosecute their plans with obstinacy and perish; others, who are more practical men, if they have failed in one way will try another.

NOTICES.

BOTANIC BANQUET.

The Friends and Agents of the Botanic System are respectfully informed that a Banquet will take place in Sheffield at the latter end of October, 1858. Of the time and place due notice will be given. Dr. COFFIN, and other gentlemen, have kindly consented to attend.—P.S. A Bazaar will also be held on the same day. The Committee will be glad to receive Subscriptions, either in money or goods, and the names of parties who intend to furnish trays. The proceeds to be given for the erection of an hospital.

JOSEPH NADIN, Hon. Sec., 203 and 204½, Shales-moor.

Dr. COFFIN may be consulted, gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague Place, Russell-square, daily *(Sundays excepted)*, from one to two o clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

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The best-approved application for cleansing, beautifying, preserving and reviving the hair. It should be used by all persons recovering from fever, or any other illness, as it restores the tone of the cutical secretions, and gives a healthiness to the hair and skin.

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Eight years accredited Agent to Dr. COFFIN, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway ; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

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Keeps constantly on hand all the Remedies used in Dr. COFFIN'S Practice ; also Dr. COFFIN'S "Guide to Health," "Treatise on Midwifery," "Treatise on the Generative Organs," "A Course of Twelve Lectures," and "Botanical Journal."

Mr. NADEN is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

ANATOMICAL AND BOTANICAL DRAWINGS.

The Editor has several sets of the above on hand for sale.

These Drawings are highly extolled, declared to be most excellent, and are astonishingly low in price.

A set of 5, beautifully coloured by hand, from .. .. 25*s.*
A single Drawing .. .. 7*s.* 6*d.*
A set of 12 of our Medical Herbs, beautifully coloured from Nature .. .. 24*s.*
A single Drawing .. .. 2*s.* 6*d.*

For further descriptions see the eighth vol. of our Journal, page 168.

G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

34, WORCESTER STREET,

Sole Agent for Dr. COFFIN in Birmingham, from whom all the Herbs, Roots, Barks, and preparations used in the Botanic Practice, can be had genuine.

Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning ; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

THE OXFORD PIONEER OF MEDICAL BOTANY,

Explanatory of the Principles of Botanic Treatment ; to which is added a compact Pharmacopœia of Botanic Medicines, by

BENJAMIN V. SCOTT,

Medical Botanist, and Agent for Dr. COFFIN, founder of the Botanic System in England,

5, MARKET PLACE, OXFORD.

Price Twopence, or Threepence by post; or Twelve copies free by post for Two Shillings.

This really is a very valuable little work, being a clear, concise and just exposition of our Medico-Botanic principles. The compact Pharmacopœia appended is certainly a desideratum. No family in the United Kingdom ought to be without a copy. This, read in conjunction with Dr. COFFIN'S "Treatise on Blood-letting and Fever," must convince all who are not wilfully prejudiced, and blind to conviction, of the unsophisticated truth of Dr. COFFIN'S Medico-Botanical System and Practice.

NOTICES TO CORRESPONDENTS.

POST-OFFICE ORDERS and all communications for goods, &c. to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 272.—Vol. IX. SATURDAY, OCTOBER 16, 1858. Price 1d.

THE GLEANER, No. 18.

CHARACTERISTICS OF DIFFERENT AGES.

Although there are no well marked divisions between the periods of childhood, youth and adolescence, through all of which we witness the continuance of the processes of growth and development (though in a gradually decreasing ratio), yet we may appropriately distinguish each as the epoch of one of those important changes which tend towards the completion of the fabric; namely, *childhood*, as ranging through the greater part of the period of the second dentition; *youth*, as characterised by that increased evolution of the sexual organs, and by those general constitutional changes accompanying that evolution, which altogether constitute puberty; and *adolescence*, as distinguished by that entire consolidation of the osseous skeleton, which is not completed until the full stature has been attained. It will be convenient first to consider what is common to all these periods, and then to notice the features by which they are severally characterised.

The passage from infancy to childhood may be regarded as marked by the eruption of the deciduous teeth; by the termination of that direct supply of food to the offspring, which is afforded until then by the mammary secretion of the mother; by the dawn of the intellectual powers, manifested in the first efforts of speaking; and by the acquirement of sufficient control over the muscular apparatus to render it subservient to the increasing desire which then displays itself for independent locomotion. All these advances usually take place simultaneously, or nearly so, during some part of the second year, some infants being much more forward than others, both in "cutting their teeth" and in learning both to walk and talk. When they have been completed, the child enters upon a life which is in many respects new. The alteration of its diet involves a much higher activity of all the organs which are concerned in making blood; whilst its greatly increased amount of exertion, both of body and mind, gives occasion to a more rapid disintegration of the nervous and muscular tissues, and hence to a higher activity of the excretory organs. This will of course progressively augment, in proportion as the nervo-muscular apparatus is brought, with advancing years, into more vigorous and more prolonged exercise; until, with the whole attainment of adult age, the disintegration of these tissues comes to be the chief source of the excrementitious products. But during the whole period of increase there is another source of demand for nutritive activity, in that perpetual *reconstruction* of the fabric (involving a sort of continual pulling down and rebuilding upon a larger scale, all the old materials being carried away as useless), which is a necessary condition of its growth; but this demand of course slackens with the diminution of the rate of increase, and at last it ceases altogether, just when the other attains its maximum. Hence the demand for food, on the one hand, and the amount of excretory matter set free from the body on the other, are remarkably large during the whole of this period; the child, as every one knows, consuming far more nutriment

than the adult, in proportion to the weight of their respective bodies, and the like being true of the quantity of carbonic acid exhaled from the lungs, and of the urea given off by the kidneys. That the germinal capacity, though inferior to that of the embrio, still persists in a high degree during the period of childhood and youth, is shown in the readiness with which the effects of injuries and disease are recovered from; for, although the regeneration of lost parts does not take place to nearly the same extent as during early embrionic life, yet, up to a certain point it is effected with great completeness, and with much greater rapidity than at later epochs. It is still in fact, rather in exercise of formative power than in the production of nervo-muscular vigour, that the vital force of the earlier part of this period is displayed, and we may readily trace such a relation of reciprocity between these two moods of its manifestation as is strongly indicative of the community of their source; for it is familiar to every observer, that when the growth of a child or a young person is peculiarly quick, his nervo-muscular energy is usually feeble, and his power of endurance brief, in comparison with that which can be put forth by one whose frame is undergoing less rapid increase; and we observe, moreover, that the capacity of resistance to depressing influences of various kinds, which is a no less decided manifestation of the vital powers of the organism (seeing that these influences are of a kind which *tend towards* its death), is possessed by the latter in a far higher degree than by the former. This is remarkably the case in regard to privation of food, and depression of external temperature, under which, too, children and young persons succumb much more speedily than adults.

It is most interesting to trace during the progress of the development of the bodily fabric, the gradual expansion and invigoration of the mental powers. The acquirement of language constitutes the most important step in the development of the *ideational* consciousness; and it is easy to recognise in the psychical manifestations of children, the further progress of that development. The formation of *associations* between ideas takes place with extraordinary readiness and tenacity during the earliest period of childhood: and these exercise so much influence over the succession of the thoughts during the whole remainder of life, that "the force of early associations" has become proverbial. Out of these associations arise on the one hand, memory and imagination, on the other hand, those simple processes of reasoning which are necessary to the development of a higher class of ideas. Thus the mind passes from those primary notions of individual objects which are directly suggested by sense perceptions; to those *abstract* ideas of their qualities which enable them to recognise those qualities elsewhere, notwithstanding the existence of differences in other respects, and thence to those general ideas in which the abstractions are embodied.

(To be continued.)

MEDICAL EDUCATION.

(Continued from page 11.)

Dr. Copland, says, "I believe that in all professions, but more especially in ours, honours are not altogether empty words; they are in fact valuable entities, contributing indirectly, but very materially, to the advantage of a physician." A curious instance of how much the fellowship is coveted is afforded in the fact that Dr. Pearson, who had reached his 80th year, being informed in 1828, that he would at length be admitted to an examination as a preliminary to admission into the college, bravely set about preparing himself for the ordeal by getting up his Greek, and died reading Aretæus! On the whole it appears then that by means of the fellowship, physicians may most speedily and surely secure what the majority of men dearly love—honour, rank, professional employment, and, as a consequence, pecuniary success The reader may now judge for himself of the value of the privilege.

About 1767 legal proceedings were instituted in three cases, those of Askew, Letch, and Archer, for the purpose of ascertaining whether the college could legally maintain its exclusive system. The trials took place before Lord Mansfield. He decided that the bylaw in force more than a century, by which, as

stated above, the number of fellows had been limited, was illegal. He concluded his judgment, in the case of Dr. Letch, with a recommendation to the college to settle all other matters amongst themselves without bringing them into court, and with a caution against narrowing their ground of admission so much that even if a Boerhave should be resident here, he could not be admitted into the fellowship.

Under the pressure of Lord Mansfield's decisions, the last of which was delivered in 1770, the statutory limitation of the number of fellows was annulled; and about 1771 two new statutes were enacted, one enabling the President, *speciali gratiâ*, to nominate for the fellowship without previous examination, any licentiate of ten years' standing; and the other enabling a fellow to propose for examination a licentiate of seven years' standing, it being understood that a licentiate so proposed should, on passing his examination, be admitted into the college. But even this extent of liberality seems to have been of the spasmodic sort, induced only by the galvanic shock administered it by the noble judge. In September, 1784, a statute was passed by the college, that the power of nominating to the fellowship, by virtue of the two statutes just mentioned, should not be exercised if the number of fellows should exceed fifty! Moreover, the statute giving to fellows the power of nominating licentiates of seven years' standing, was kept strictly secret from the licentiates for several years after its enactment; and when dim intimations of its existence reached them, authentic knowledge concerning it was refused. In fact, it appears that this statute was never intended to be acted upon, and was a mere mask of liberality conveniently assumed in a court of justice, and as conveniently laid aside when it had answered its purpose.

Many efforts have been made by distinguished licentiates to gain admission by virtue of that bylaw, but in vain. Dr. Burgess, a fellow, proposed Dr. Sims, a licentiate; the proposal was not seconded, and therefore he was not balloted for.

In 1796 Dr. Stanger applied to be admitted for examination as a candidate for the fellowship; he was refused, although he offered to submit to an examination in Greek, and to any test of professional competency, however severe. He then applied to the Court of King's Bench for a mandamus to be admitted to examination. The legal contest was a trial of strength between the licentiates and fellows. The judges, of whom one was Lord Kenyon, long employed as chief counsel for the college, pronounced in favour of the sufficiency of the bylaw just mentioned, so that the mandamus was refused, and the licentiates were defeated. The mask answered its purpose, and they were again left dependent on the liberality of the college. In 1797 and in 1798 Dr. Wells, from a sense of public duty, made a trial of this bylaw as a means of admission; but it still answered its purpose. He says, "I determined to apply for an examination of my own fitness to be a member of the college, rather than allow the grounds of the decision (at the recent trial) to run any hazard of being forgotten." Drs. Pitcairn and Baillie (fellows) proposed him: his first application was refused on the alleged ground that no notice had been given to the fellows of an intention to propose him; his second, made with the utmost formality, "was not even balloted for: one of the fellows moved the previous question, which was carried."

Up to 1834, and we believe up to the present time, no one has been elected under the statute giving to fellows the right of proposal. Drs. Stanger and Wells were eminently qualified for the fellowship, and the latter was not only proposed and seconded by two of the foremost physicians of their time, but was himself already too distinguished to be capable of acquiring fresh honour by admission to the college. The failure of these men effectually discouraged all others from even hoping to attain the fellowship through the bylaw in question.

The only access to the college, except that through Oxford or Cambridge, is by the favour of the president, and without examination, or by recommendation of a body of fellows, called "consillarii," which was established in consequence of the Parliamentary exposure in 1834, and which is deputed to select licentiates, for the fellowship. Persons thus selected are

also admitted to the college without examination. The bylaw granting admission by favour of the president was first enacted, as we have said, under the stimulus of Lord Mansfield. The president was then empowered to propose two licentiates yearly; even this number was thought too great, and the bylaw was altered so as to admit two only every other year, but in 1823 it was realtered to its original shape. Under this statute nineteen licentiates obtained the fellowship within the period of sixty-three years ending 1834, seven of them being admitted within the last ten years of that time; while during the same time one hundred and forty-seven Oxford and Cambridge graduates were elected.

We shrink from writing these odious pages of the history of a body of physicians who stand at the head of their profession; and only a sense of duty compels us to expose the demoralising as well as deadening effects of entrusting a corporation with exclusive privileges, and with legal power to maintain and enforce them. Gentlemen, who individually are refined, generous, and of scrupulous honour, become, in their corporate capacity, coarsely selfish, grasping, unjust, and are not ashamed to have recourse to those mean subterfuges, equivocations, and even falsehoods which in the relations of individual men with each other would at once be denounced with contempt.

We have seen how willingly Drs. Sims, Stanger, and Wells would have undergone a searching examination as a preliminary to admission into the college. The obstacle has always been the refusal of the college to examine, never of the candidates to be examined; and yet, when Dr. Macmichael, who had been both censor and registrar of the college, was asked, "How do you account for the circumstance that, under the seven years' qualifying statute, not a single election of a licentiate has taken place from the time of its passing, down to the present period?" He replied, "I presume that the circumstance of being publicly examined by the whole college would be a great objection to any one wishing to avail himself of that privilege!" Again, referring to the efforts of Drs. Sims and Wells, the Parliamentary Committee asked Sir Henry Halford, the president, how he accounted for these unsuccessful applications; to which he answered, "It is impossible for me to say what passes in the minds of those people who are to undergo an examination, as the consequence of their application;" and on another occasion he said, "I do not know the class of persons who are excluded who come enabled to pass an examination."

The celebrated Sydenham, while still in the flesh, and when he might have claimed a share of the college privileges, was excluded—only in the spirit is he freely admitted; the college does not scruple to avail itself of his Latin works as the best standard by which to test the medical latinity of its licentiates. Dr. Wells wrote at least eighteen different essays on philosophical and pathological subjects, chiefly the latter: the great value of the one in which he traced the disease of the valves of the heart to acute rheumatism as its cause, extorts even from that rigid defender of the college, Dr. Macmichael, the reluctant testimony that "it is a very important one;" the papers entitled "Observations on the Dropsy which succeeds Scarlet Fever," "Of Dropsy which has not succeeded Scarlet Fever," and "On the presence of the red Matter and Serum of the Blood in the Urine," announced, we believe, for the first time, the immensely important discovery of the causal connection which so often exists between dropsy and diseases of the kidneys, and, as indicated by the presence of albumen in the urine, of the special derangement of the renal functions in all cases of dropsy after scarlet fever; while his celebrated essays on double vision and on dew, placed him among the foremost of philosophical inquirers. Dr. Elliotson, who has read his works more than once, says of him, "As to a full knowledge of his profession, I am satisfied that no one in modern times has been superior to him;" while his opinion of him as a natural philosopher was "the very highest;" the Royal Society enrolled him among its fellows, with whose president he was on terms of closest intimacy, and his life, dictated by himself on his deathbed, abounds in evidence of his "singular

virtue and independence of mind." But he was not found worthy of admission to the College of Physicians, the president of which did not know the class of persons who, enabled to pass an examination, were excluded! The eminent Dr. Fothergill had the honour of sharing and sympathising in his unworthiness. Dr. Watson, writing in 1771, immediately after the event, to his friend Dr. Fothergill, thus recounts the affair: "To the surprise of every one present, Sir William Browne rose and proposed you, and, as I am told, said handsome things of Dr. Fothergill. *An propter invidiam, an propter amicitiam ambigitur.* In his speech or manner there seemed nothing ironical; it was rather, as Dr. Herberden says, in serious sadness, 'As you are an arch-rebel, this was not expected, and everybody stared.' However, after a considerable pause, both Dr. Herberden and Sir John Pringle rose and seconded Sir William's motion. Upon the ballot there were thirteen negatives and nine affirmatives. . . . Had the ballot determined in your favour, Dr. Herberden intended to have proposed me; but, on seeing the sense of the fellows towards rebels, he declined it." Dr. William Hunter, whose eminent professional merits and contributions to science were only overshadowed by the towering fame of his brother John, was excluded. Dr. Copland, whose comprehensive and invaluable "Dictionary of the Practice of Medicine" is alike distinguished as a record of scientific experience, sound sense, and vast medical learning, says, "having had a regular preliminary education at Edinburgh in literature and philosophy, I made inquiry whether I could be examined for a higher grade in the college than that of licentiateship. I was informed that no one could be examined for admission as a fellow, unless he was a graduate of Oxford or Cambridge." Dr. Locock was also judged ineligible. His exclusion, as well as that of Dr. William Hunter, was on the ground that he was an accoucheur; for, notwithstanding the fact that women will persist in bringing children into the world, and that many of the gravest maladies which flesh is heir to consist of organic or functional diseases of the uterine organs, the College of Physicians was of opinion that the practice of midwifery and the collateral branches of that department of the profession is a degradation from which its fellows must be sacredly guarded. Therefore it was enacted that no one should be admitted to the fellowship who practises the obstetric art. The health and life of the women of England, might be fittingly left, the college seemed to think, to that large class of ignoramuses who are ever ready to supply their want of knowledge by assumption, and their want of scientific skill by reckless hardihood. But though men like Dr. Wells, Dr. Fothergill, Dr. William Hunter, Dr. Copland, and Dr. Locock, were not admissible into the college, Charles Duke of Richmond, and John Duke of Montague, slight dabblers in medical science, and never practitioners, were found eligible and were elected. Their names appear in the list of fellows in the Pharmacopœia of 1771. The possession of the peerage seems to have been a qualification for the fellowship more valid in the eyes of the college than that laid down by the granter of their charter—viz., that the candidate "be profound, sad and discreete, groundly learned, and deeply studied in physyke."

(To be continued.)

FACTS FOR FAMILIES.

From the "Destructive Art of Healing."

(Continued from page 379, vol. viii.)

To clear away a given folly, in a country like England, is too often unfortunately only to make room for some other folly equally egregious. This has ever been the case with medicine. Just as a considerable number of physicians had come to adopt my own views of the true constitutional origin of diseases, a class of doctors sprang up who will have it that, in the majority of *female* complaints, at least, there must ever be more or less of *local* wrong, which no possible constitutional treatment can cure! Whispering mysteriously the words "engorgement" and "enlargement" "ulceration of the *os*," "changes of position" and "misposition," "version" and "retroversion"—phrases which, till very recently, were never heard in an English sickroom—these people straightway proceed, with

speculum, caustic, and other shocking appliances, to perform their beastly operations—operations dangerous alike to the moral and to the physical wellbeing of their patients. Men of England! if you only knew what your wives and daughters *needlessly*—mark that word!—needlessly experience at the hands of those quacks, your brows would burn with shame and indignation. How such brutality as these creatures practise ever came to pollute our shores, is one of the miracles of the times. A proper feeling in the minds of our women should have preserved them from the humiliation and torture to which they have been subjected; while Englishmen of all ranks should have united, long ere this, to expel from the land the sordid wretches who first introduced the grossness and indecency of the hospitals of Paris to the houses and hearths of a too confiding people!

A terrible error prevails at this moment in the minds of the English public—the error of trusting to persons who write books on "particular diseases." To a man, these "specialty" doctors, as they call themselves, are generally little better than exceedingly specious charlatans, who mystify and mistreat their victims for their own special benefit. If apoplexy and epilepsy, palsy and mania, can, like fever and ague, be *caused* by impressions affecting any of the nerves of the body, even the most distant from what is called the "seat of the disease"—the nerves of the skin or intestines, for example—why may not one and all of them be *cured* by remedies acting through the same nerves on the general constitution? By such remedies only *can* the majority of these diseases in reality be cured. Not one of these complaints will yield to mere local measures. Local measures, especially the local measures employed by the specialists, more generally aggravate than ameliorate the case—procrastinate instead of quicken the cure. Pity it is that nothing short of a long illness pays! In the decline of the Roman Empire there was a doctor for every part of the body; the fingers and toes had each their separate doctor! We have nearly come to that pass here. An universal medical corruption reigns at this moment in England. There is no hope—there can be no hope for the sick, till the sane and sound awake from their lethargy, till the laity learn to know and think for themselves!

The present routine treatment of palsy by leeches, blisters, setons, and issues, is a mistake throughout; the present routine treatment of apoplexy and epilepsy by the same painful and loathsome means, is also a complete mistake; the present routine treatment of diseases of the chest, heart and lung disorders, for example, is, with a few exceptions, a series of mistakes. Almost every measure advocated by the writers on these "specialties" aggravates the disorder. If, in the case of "diseases of the joints and spine," quinine and iron can cure these so-called local diseases, why may not the same remedies be employed with equal benefit in palsy, apoplexy, and diseases of the chest? In my own hands numerous cases of each and all of these diseases have yielded like magic to each. Cases innumerable could I give here of cures of palsy, apoplexy, and chest disease, by quinine, iron and other purely *febrifuge* means. Just look at the result of the usual sanguinary measures in palsy, epilepsy, and apoplexy!—death, or worse than death—sufferings mental and physical, for which death is a happy relief. By curing the fever—the fitful, repetitive, constitutional fever, which originates and keeps up every one of these affections—every one of them may be more or less ameliorated. Beware of the localist men—the "specialty" doctors! For upwards of thirty years of his life, Sir Benjamin Brodie was a "specialty" doctor. All that time his practice—in his own speciality, diseases of the joints and spine—was a most fatal mistake; but all that time neither he nor his patients ever found it out. There are a great many men who now make similar mistakes in their own particular specialities, and *they* are *not* yet found out—possibly never may be found out—by their *patients*, at least. I allude more particularly here to the "kidney" doctors, and to those who, like Dr. Golding Bird, Dr. Bright, and others, treat gout, dropsy, diabetes, &c.—diseases which can be set up and cured through *the brain*, by the passions and emotions—with acids and alkalis, on what they call "chemical principles." These complaints, like every other purely

constitutional disease, being the unquestionable *developments* of a great general remittent febrile or nervous disorder, can only be successfully treated by bark, iron, and other remedies, which, like the passions and emotions, influence the all-dominant nervous system—not in a chemical, but in an *electrical* manner! Deductions drawn from the *destructive* chemistry of the inorganic crucible, are utterly inapplicable to the *conservative* chemistry of the organic living body. So at last declared the late Sir Astley Cooper, who like myself, had a thorough contempt for the chemical doctors. Every measure these people recommend in what they call their own "specialties" is a mistake—witnessed by the worse than nugatory results of their remedies in the diseases they pretend to treat on "chemical principles!" But what of that? The more blunders these practitioners make, the better the case pays; so long, at least, as the world will reward the doctor, like the lawyer, most highly for—procrastination!

(To be continued.)

GRANULAR DISEASE OF THE KIDNEY

CALLED BRIGHT'S DISEASE.

Dr. Bright, in 1827, having first directed attention to this subject, the disorder has been very often called "*Bright's disease*," and the peculiar disorganisation of the kidney on which it depends, "Bright's kidney." More recently, the albuminous condition of the urine has been considered as the most important, because the most frequent and most easily cognisable, among the symptoms of the malady; and the term *albuminuria* has been proposed, and very generally adopted, as its pathological designation. In diabetes, the urine is loaded with sugar. Here the urine is almost uniformly impregnated with albumen, that animal principle coagulable by heat, which is so familiar to us in the white of eggs. But a variety of other symptoms are also present. We have, therefore, to investigate these, to point out under what conditions of the general system albuminuria occurs, from what causes it originates, with what disorganisations it is associated, to what extent it affects life, and how its advances may be most effectually controlled.

Symptoms of albuminuria.—The affection so called may, like rheumatism, show itself in an acute or in a chronic form. The acute form is ushered in by rigors, succeeded by a hot skin, nausea and vomiting, uneasiness or a dull pain in the loins, with a scanty secretion of albuminous urine; in almost all cases, general anasarca (see "Hooper's Medical Dictionary") appears at the same time, and is acute or inflammatory. In a few cases the secretion of urine, after a few days, is suspended altogether, when comatose symptoms supervene, and death speedily ensues; at other times, the inflammatory action extends to some other internal organ, and the patient dies from the results of peracute pleurisy, pericarditis, peritonitis, &c. Occasionally the strength of the patient's constitution, aided by the vigorous efforts of the physician, overcomes the disease, and perfect recovery succeeds. In a certain proportion of cases, recovery is only partial, and a foundation is laid for that more chronic ailment which indicates the granular degeneration of the kidney, and to which the term *Bright's disease* is commonly applied.

The kidneys, when examined after death so occurring, appear larger than natural, of a dark chocolate colour, and evidently gorged with blood; the other viscera present appearances which may be generally anticipated from the character of the symptoms during life.

Chronic albuminuria.—The leading feature of this disease is the voiding of a highly albuminous urine of low specific gravity. The concomitant symptoms have, for the most part, very little reference to the kidney, and are only to be connected with it by a process of reasoning. The patient often complains of a weight in the loins. The bladder is irritable, and there is a frequent desire to make water. The urine is occasionally red or dark-coloured, as well as albuminous, and sometimes tinged with blood. The countenance is pale, the skin dry and harsh, vomiting is sometimes observed. The bowels are flatulent and irregular, and the liver is frequently suspected to be the primary seat of mischief. Patients labouring

under this disease are liable to inflammatory and congestive states of other important organs; hence, in its progress, coma, convulsions and apoplexy may occur. The heart, too, may become implicated, and dropsy is always met with sooner or later.

State of the urine.—The urine in this disease is always of a very low specific gravity, never exceeding 1012, and sometimes falling as low as 1004. Now the specific gravity of healthy urine is 1015. This unnaturally low density of the urine is albuminuria. Notwithstanding, the addition of the new material shows that the other ingredients proper to healthy urine (the urea and salts) are preternaturally diminished in quantity. The solid contents of healty urine amount to about 70 parts in a thousand; in this disease they are often reduced to 12, and have been met with even lower than this. The quantity of *albuminous* matter in the urine varies in different cases, and in the same case in different periods of disease; it does not necessarily increase with the advance of the disease, but rather the reverse. In general, the albumen is most plentiful in its early stages. The presence of albumen in urine is readily detected by the simple experiment of heating the urine in an iron spoon over the flame of a candle; an additional test is the application of nitric acid, which has the property of precipitating albumen in a flaky form. This is especially applicable, when the suspected urine is preternaturally alkaline, and the albuminous matter thereby rendered less sensible to the action of heat.

Healthy urine contains no albumen. This animal principle is the great agent in nutrition, and is not an excrementitious product. We might reasonably presume, therefore, that the urine in this disease obtains its albumen at the expense of the serum of the blood. Experiment confirms this opinion. It has been ascertained, by Dr. Christison and others, that the more the urine is loaded with albumen, the less there is of it in the serum of the blood, and the lower is the specific gravity of the serum. Another remarkable change which the blood undergoes, is the rapid disappearance of its red particles or colouring matter. It is remarked by Dr. Christison, that "no disease so closely approaches hæmorrhage in its power of impoverishing the blood, and exhausting its red particles as albuminuria: hence arises the peculiar hue of the skin, and that waxy aspect which so strongly characterises the victims to this complaint."

In the early stages of the chronic form of albuminuria, the urine is generally scanty; instead of the two pints which are commonly discharged in health, the quantity seldom exceeds one pint, and is often less than half a pint. In the more advanced periods of the disease, the quantity of urine approaches more nearly the standard of health; in some few cases it has been found even to exceed it.

The secondary effects of chronic albuminuria are *renal dropsy*, and others before mentioned as succeeding the acute form of this disease. The other complications or secondary affections concurrent with albuminuria, are headache, lethargy, epileptic fits, coma, and occasionally apoplexy. Dr. Christison is inclined to view coma as the normal mood by which this disease proves fatal. Serum is in such cases usually found in the ventricles of the brain, and to the presence thence arising the comatose state may reasonably be attributed. Some pathologists contend, that urea contained in the blood may act as a poison to the nervous system, and in this manner give rise to the succeeding apoplexy. Of seventy fatal cases observed by Dr. Bright, death was ushered in by well-marked cerebral symptoms in thirty.

Causes of albuminuria.—This disease prevails at different ages, and under apparently very opposite conditions of the general system. It has been met with in infancy. The dropsy, which succeeds scarlet fever, is often associated with an albuminous condition of the urine and granular degeneration of the kidney. The chief subjects of this disorder are adults in the prime of life. Men are more liable to it than women. The scrofulous habit of the body seems to give a tendency to it; intemperate habits predispose to it; exposure to cold and moisture is one of its direct exciting causes, and it has sometimes appeared to originate in injuries to the loins. It

is a very dangerous malady, and when cured is prone to reappear.

Treatment.—The dropsical accumulation must be removed as far as possible by purgatives and diuretics. The secretions of the skin are to be encouraged by diaphoretics and warm baths.

Observation.—The natural tendency of so many drugs to pass off by the kidneys, and to influence their secretions, holds out great encouragement to attempt a more effectual treatment of this disease than any which has been devised.

HIPPOCRATES.

It has been suggested to us by a friend to our great cause, that an account of the life of Hippocrates would be highly interesting to our readers, especially as the majority are not acquainted with the subject; and though that great man is often alluded to in Dr. Coffin's "Guide to Health," and frequently in the Journal, yet it was not within the scope of the Dr.'s Guide to give the life of Hippocrates, such a subject belonging more particularly to such a work as our Journal. Therefore, we will give, not only an account of the life of that eminent ancient physician from authentic sources, but, also, a relation of his professional labours, and those circumstances which stamped him as the greatest physician of antiquity.

Hippocrates was born in the island of Cos, in the first year of the 80th Olympiad, A.M. 3544, ant. J.C. 460. He is said to have descended from Æsculapius by Heraclides his father, and from Hercules by his mother Praxitea. He first applied himself to the study of natural things in general, and afterwards to that of the human body in particular. His own father was his first master. He also received lessons from another celebrated physician, Herodicus. He made a great proficiency in all the parts of physic, and carried the knowlege of it as high as was possible in those days.

It has already been said that he was born at Cos. That island was consecrated to the god Æsculapius, who was adored there in a particular manner. It was a custom for all, who had been cured of any distemper, to make an exact memorandum of the symptoms that had attended it, and the remedies by which they had been relieved. Hippocrates had caused all these accounts to be copied, which were of no small advantage to him, and served him instead of a great length of experience.

His vast capacity appeared in a peculiar manner during the plague, that raged particularly in the city of Athens, and throughout Attica during the Peloponnesian war, A.M. 3574, ant. J.C. 430.

The people of Abera are said to have written to Hippocrates, desiring him to come thither to visit Democritus. They saw that philosopher regardless of everything, laugh at everything, say that the air was full of images, and boast that he made voyages into the vast immense of things. Considering all this as so many symptoms and beginnings of frenzy, they were afraid he would run mad, and that his great learning would entirely turn his brain. Hippocrates set them right, and judged very differently of Democritus's condition. It is not certain that the letters ascribed to Hippocrates, whence this fact is taken, are genuine.

The writings which he left behind him in great number, have always been and still are considered as a very excellent and proper foundation for the study of physic. He has preserved the remembrance of an event in them, which says much for his ingenuousness. It is the sincere confession of an error, which he had committed in dressing a wound in the head: for anciently, as we have observed, physic, surgery, and pharmacy, were not distinct professions. He is not ashamed to own, at the expense in some measure of his glory, that he was mistaken; lest others, after him and by his example, should fall into the same error. Little minds, says Celsus, and men of vulgar abilities, do not act in this manner, but are much more careful of the small reputation they have, because they can lose nothing without impoverishing themselves. Only great geniuses, conscious themselves of the abundance they otherwise possess, are capable of such a confession, and of neglecting the little losses, that diminish nothing of their riches and opulence. He makes also another confession, that argues an admirable spirit of candour and ingenuity.

Of forty-two patients, whose distempers he describes in his first and third books *upon epidemical diseases*, he owns that he cured only seventeen, that the rest died under his hands. In the second book of the same work, speaking of a kind of quinsy attended with dangerous symptoms, he says, that all his patients recovered. "Had they died," adds he, "I should have said so with the same freedom." In another place, he complains modestly of the injustice of those who cry down physic, under the pretence, that many people die in the hands of the physicians—as if, says he, the death of the patient might not be imputed to the insurmountable violence of the distemper, as much, or rather more, than to the fault of the physician. He declares, that it is no dishonour to a physician, when he is at a loss how to act in certain difficult cases, to call in other physicians, in order to consult with them upon what is necessary to be done for the patient's good. Whence we see that such consultations are an ancient custom.

The character of a truly honest man and one of the greatest probity, appears in the oath of Hippocrates, with which he introduces his works. He calls the gods, who preside over physic, to witness the sincere desire he has to discharge exactly all the duties of his station. He expresses a warm and respectful gratitude for him who taught him the art of physic, and declares that he shall always consider him as his father, and his children as his own brothers, whom he shall make it his duty to assist upon all occasions, both with his fortune and advice. He protests, that in the regimen which he shall prescribe for the sick, he shall take great care to consult what may be best for them, and to avoid whatever may be to their prejudice. He proposes to himself the leading of a pure and irreproachable life, and not to dishonour his profession by any action worthy of blame. He says that he shall never undertake to cut for the stone, and shall leave that operation to persons whom long experience has rendered dexterous at it. He protests that, if in visiting his patients or otherwise, he shall discover anything which ought to be concealed, he will never reveal it, but will inviolably observe the sacred law of secrecy. And lastly, he hopes, by his punctual attachment to all these rules, that he shall acquire the esteem of posterity, and consents to forfeit the good opinion of the world for ever, if he is so unfortunate as to depart from them.

He is highly praised for his disinterestedness—a most estimable virtue in a physician. What he says upon this subject, is worthy of remark. He is for having the physician act, in respect to his fees, with honour and humanity, and regulate them by the patient's power to reward them more or less liberally. There are even occasions, says he, in which a physician ought neither to ask nor to expect reward; as in the cases of strangers and the poor, whom all the world are obliged to assist. He appears to have been full of respect for the Divinity. "Those," says he, "who first discovered the manner of curing diseases, believed it an art, of which the invention ought to be attributed to God."

Nothing is particularly known of the death of Hippocrates. He died at a very advanced age, and left two sons, Thessalus and Draco, who acquired great reputation among the physicians, as well as Polybus his son-in-law and successor.

A MEDICAL GLOSSAY, OR EXPLANATION OF TERMS.

(Continued from page 379, vol. viii.)

Emollients—those substances which possess a power of relaxing the living animal fibre, without producing that effect from any mechanical action.

Emphysema—air in the cellular membrane.

Empyema—a collection of pus in the cavity of the thorax.

Enterocele—a rupture formed by a protrusion of intestine.

Entero-epiplocele—a rupture formed by the protrusion of part of an intestine, with a portion of the epiploon.

Enuresis—an involuntary flow of urine.

Epiplocele—an omental hernia.

Epistaxis—bleeding at the nose.

Erysipelas—a diffused inflammation of the skin.

Escharotics—caustics. Those substances which possess a power of destroying the

texture of the solids of the animal body, to which they are directly applied.

Excrescence—any preternatural formation of flesh.

Exomphalus—an umbilical hernia.

Exostosis—a morbid enlargement or hard tumor of a bone.

Fistula—a long and sinuous ulcer that has a narrow opening, and sometimes leads to a larger cavity.

Fracture—a solution of a bone into two or more fragments.

Fungus—proud flesh. A morbid growth of flesh upon an ulcer.

Furunculus—an inflammatory tumor of a subcutaneous gland.

Ganglion—an encysted tumor formed in the sheath of a tendon, and containing a fluid like the white of an egg.

Gangrene—a mortification of any part of the body, before endowed with vitality.

Gonorrhœa—a preternatural flux from the urethra or vagina.

Granulation—a healthy growth of flesh on a sore.

Hæmatocele—a collection of blood in the tunica vaginalis, or in the cellular membrane of the scrotum.

Hæmorrhage—a bleeding or rupture of a blood-vessel, the blood flowing therefrom.

Hæmorrhoids—the piles.

Hectic—a term applied to a fever that is attended with evening exacerbations, and slight remissions in the morning, and which reduces the strength and causes the body to waste.

Hernia—a rupture or protrusion of a part of any viscus from one of the circumscribed cavities of the body.

Hernia congenita—a species of hernia, wherein the intestine or omentum adheres to the testicle.

Hordeolum—a tumor in the margin of the eyelid, resembling in some respect a barley-corn.

Hydrarthrus—a white swelling of a joint.

Hydrocele—dropsy of the scrotum.

Hydrothorax—dropsy of the chest.

Indication—that which demonstrates in a disease what ought to be done.

Inflammation—a disease characterised by increased heat, redness and tumefaction.

Ischuria—a suppression of urine.

Lithotomy—the operation of cutting a stone from the bladder.

Mastodynia—inflammation of the breasts.

Maturation—the process which succeeds inflammation, by which pus is collected into an abscess.

Meliceris—a tumor that contains a substance like honey.

Mollities ossium—a disease of the bones, wherein they can be bent without fracturing them.

Moxa—a variety of the actual cautery.

Nævi materni—mother's marks.

Necrosis—the dry gangrene. A species of mortification, in which the parts become dry, insensible and black, without any previous inflammation.

Œdema—a dropsical swelling of the flesh.

Ophthalmia—inflammation of the eye.

Ozæna—a malignant ulcer in the nostrils.

Paracentesis—the operation of tapping or drawing water from the cavities of the body.

Paraphymosis—a permanent contraction of the foreskin behind the glans penis, so as to denudate the glans penis and strangulate it.

Paronychia—a whitloe, or whitlow.

(To be continued.)

VALUE OF EXERCISE.—Exercise for the body, occupation for the mind—these are the grand constituents of health and happiness; the cardinal points upon which everything turns. Motion seems to be a great preserving principle of nature, to which even inanimate things are subject; for the winds, waves, the earth itself, are restless, and the waving of trees, shrubs and flowers is known to be an essential part of their economy. A fixed rule of taking several hours' exercise every day, if possible in the open air, if not, under cover, will be almost certain to secure one exemption from disease, as well as from the attacks of low spirits, or *ennui*, that monster who is ever waylaying the rich and indolent. "*Throw but a stone*, the giant dies." Low spirits cannot exist in the atmosphere of bodily and mental activity.

NOTICES.

BOTANIC BANQUET.

The Friends and Agents of the Botanic System are respectfully informed that a Banquet will take place in Sheffield at the latter end of October, 1858. Of the time and place due notice will be given. Dr. COFFIN, and other gentlemen, have kindly consented to attend.—P.S. A Bazaar will also be held on the same day. The Committee will be glad to receive Subscriptions, either in money or goods, and the names of parties who intend to furnish trays. The proceeds to be given for the erection of an hospital.

JOSEPH NADEN, Hon. Sec., 203 and 204½, Shales-moor.

CONSULTATION.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague Place, Russell-square, daily *(Sundays excepted)*, from one to two o clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

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Eight years accredited Agent to Dr. COFFIN, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway ; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

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Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

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ANATOMICAL AND BOTANICAL DRAWINGS.

The Editor has several sets of the above on hand for sale.

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For further descriptions see the eighth vol. of our Journal, page 168.

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Explanatory of the Principles of Botanic Treatment ; to which is added a compact Pharmacopœia of Botanic Medicines, by

BENJAMIN V. SCOTT,

Medical Botanist, and Agent for Dr. COFFIN, founder of the Botanic System in England,

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Price Twopence, or Threepence by post; or Twelve copies free by post for Two Shillings.

This really is a very valuable little work, being a clear, concise and just exposition of our Medico-Botanic principles. The compact Pharmacopœia appended is certainly a desideratum. No family in the United Kingdom ought to be without a copy. This, read in conjunction with Dr. COFFIN'S "Treatise on Blood-letting and Fever," must convince all who are not wilfully prejudiced, and blind to conviction, of the unsophisticated truth of Dr. COFFIN'S Medico-Botanical System and Practice.

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NOTICES TO CORRESPONDENTS.

J. CH.—We decline the offer.

P. SINCLAIR.—A personal interview is indispensably necessary. If preferred, the interview can take place at a time and within a convenient distance which P. S. may appoint.

POST-OFFICE ORDERS and all communications for goods, &c. to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 19.

CHARACTERISTICS OF DIFFERENT AGES.

In all these processes, the child-mind seems to be so entirely concentrated upon the particular subject of its thoughts as to be "possessed" by it for the time, almost as completely as a "biologised" subject is by his dominant idea; and no prolonged study of it is required to justify the statement, that its operations are for some time entirely *automatic*, and that the acquirement of *volitional* control over them, on the part of the individual, is a very gradual process. As a general rule, it may be laid down, that the activity with which the formation of new ideas takes place in the child, and the rapidity with which the attention transfers itself from one object to another, prevents any single state from fixing itself durably in the consciousness, so that the memory preserves but faint traces of the greater part of what passes through the mind; and it is (for the most part) only when the same thoughts are frequently recurred to, that they take root. Still we occasionally find, that particular impressions exert a very powerful influence on the subsequent course of thought and feeling; and there is good reason to believe, that even where the *consciousness* loses its hold over them, impressions of a transient nature may leave such traces in the brain, that they may be reproduced at any future time, when the appropriate suggestion may happen to be applied. Whilst the ideational consciousness is thus being expanded and elevated, the *emotional part* of the psychical nature is rapidly acquiring a greater range and intensity of action. The infant and young child give ample evidence in their actions of the several forms of emotional sensibility which connect themselves with sensational and perceptive states; but no sooner does the development of ideas commence, than the various modifications of feeling attach themselves to *these;* and thus almost every thought that is not a purely intellectual abstraction, comes to possess more or less of an emotional character. Here, again, we trace the powerful influence of early impressions, for, notwithstanding that the state of feeling which is habitual to each individual, may depend in a great degree upon his original constitution, yet it is unquestionable, that it is largely influenced by *sympathy* with the like states in those among whom the child receives its early education. It is of peculiar importance, therefore, that this example should be such as is wholesome for the child to imitate; since it is upon the habits of feeling, thus early formed, that the happiness and right conduct of after life mainly depend. This statement (which applies with yet greater force to the moral sense) may at first seem inconsistent with the well-known fact, that the emotions of children are peculiarly transient in their character, even when they are violently excited; one state of feeling giving place to another, even of the most opposite kind, under the influence of some new impression, or of some change in the direction of the ideas. But the same general principle applies to this case, as to the formation of habits of

thought; (viz.), that although individual impressions are more speedily dissipated from the minds of children than from those of adults, yet that when impressions of the same kind are frequently repeated, the brain *grows to* them in such a manner, that they come to take part (as it were) in its ordinary working; and thus, by establishing a particular mode of nutritive assimilation, they tend to perpetuate this acquired habit, of whatever nature it be. The right training of the emotional tendencies, and all the higher uses of the intellectual faculties, depend, in a great degree, upon the influence of the will in directing the current of thought and feeling, and thus becomes greater and greater, if rightly cultivated, with the advance of years; so that the psychical powers, whilst themselves acquiring an increase of vigour and comprehensiveness, are brought more and more under the control of the individual, and can be utilised in any way he may choose to employ them. Thus, with a diminishing mobility of *thought* and *excitability* of feeling, the mind becomes more and more capable of *sustained* and determinately *concentrated* activity, and is at the same time progressively acquiring that store of familiar *experiences*, which not only constitutes the basis of all attainments in special departments of knowledge, but supplies (when judiciously used) that "common sense" by which we form most of our judgments, and direct most of our conduct. During this period, moreover, the muscular apparatus of animal life, whose actions are at first purely automatic, is brought more and more under the direction of the mind, so as to express its ideas, its feelings, and its volitions; and it is whilst this transference is going on, that new habits of actions are more readily formed, and when once formed are durably impressed upon the organism. The excess which must exist, during the whole of this period, in the *constructive* over the *destructive* activity, and the large amount of the latter, which (as already shown) arises out of the very nature of growth, in addition to that which proceeds from the increased activity of the animal functions, necessitates a much larger proportion of repose than suffices for the adult; but this necessity diminishes with the progress of years, for the reasons already mentioned; and thus we find, that whilst the young child passes sixteen to eighteen hours a day in sleep, half the time suffices for the youth just entering on manhood.

The *second dentition*, consisting in the replacement of the deciduous or milk teeth by the permanent teeth that succeed them, which is the most important developmental change that occurs during the period of childhood, normally commences in the seventh or eighth year: the germs of the new teeth, however, are formed long previously, having their origin in a process of germination from the tooth sacs of the temporary teeth, which takes place at a very early period in the development of the latter. The three permanent molars, on either side of each jaw, however, have no such origin, since they do not replace temporary teeth. The first pair, which usually make their appearance behind the temporary molars, either contemporaneously with, or a little anteriorly to, the first shedding of the deciduous teeth, are really "milk teeth," so far as their origin is concerned, since they are developed from primitive tooth-sacs; on the other hand, the second true molars, which afterwards come up behind them, are evolved from tooth-sacs which hold the same relation to those of the first as the tooth-sacs of the other permanent teeth do to those of the deciduous teeth which they replace; and the third true molars, or *dentes sapientiæ*, or wisdom teeth, as they are denominated, bear the like relation to the second. Although the eruption of the true molars is so long postponed, yet the foundation of them is laid at an early period; for the papilla of the first is distinguishable at the sixteenth week after conception; that of the second, after the seventh month after birth; and that of the third, at the sixth year. In successive replacement of the "milk teeth," by the "permanent set," a very regular order is usually followed. The middle incisors are first shed and renewed, and then the lateral incisors. The anterior "milk" molars next follow, and these are replaced by the anterior bicuspid teeth. About a year afterwards, the posterior "milk" molars are shed and replaced in like

manner by bicuspid teeth. The canines are the last of the "milk" teeth to be exchanged; in the succeeding year, the second of the true molars appears; but the third pair, the *dentes sapientiæ*, are seldom developed until three or four years subsequently, and often much later.

(To be continued.)

THE MEDICAL BOTANISTS AND DR. SMITH.

SOME parties are so imbued with the *cacoethes scribendi et cacoethes loquendi*, that right or wrong they must and will write—right or wrong they must talk, being most desirous of appearing clever men, and exciting the admiration of their readers and hearers by their pretentious assumption of learning and knowledge, without truly possessing either, substituting mere sarcasm and verbiage for the higher attainments in which they ought to be well versed prior to their endeavouring to hold others up to personal ridicule and contempt. The vituperative Dr. Charles Smith, of Surrey-street, Sheffield, appears in several instances to come under the above denomination, who, in his introductory address to the medical students in the Sheffield Medical School, as recorded in the *Sheffield Daily Telegraph* of October the 2nd, after giving a digest of the new medical gagging and exclusive Bill, and lucidly explaining who are and who are not entitled to practise in accordance with its regulations, begins to let the evil spirit of envy and malevolence with which he seems to be charged, show itself by thus continuing his address: "That class of gentlemen (the Medical Botanists), whom our worthy member, Mr. Hadfield, pleaded that they might be allowed to register on that qualification, will not be permitted with impunity to use the addition of M.B. They might as well assume the higher addition of M.D., according to the well-known interpretation of the mystic letters M.D., MONEY DOWN."

Now, our facetious Dr. Smith, we, the agents and practitioners of Dr. COFFIN'S system of Medical Botany, will, by way of retort, ask you, whether it is not better, both for patient and practitioner, to M.D. (MONEY DOWN) it, and get speedily UP by being as speedily cured, than for the allopathic practitioner to keep the patient DOWN as long as possible by his poisonous compounds, in order to swell his bill, and sweat the purse-strings of his patient, well knowing that his diploma and new registration warrant his assumption of the mystical letters M.P., MUST PAY, having his eye more upon the cash than the welfare of his patient. Dr. COFFIN'S agents act not thus: their greatest desire is to cure quickly and radically; and that they do and have done, in innumerable cases, also in numbers of cases in the good town of Sheffield, which is *honoured* by the presence of the worthy doctor, is fully proved, and in very many cases in which the diplomatised allopath has most signally failed, and had given up the cases as hopeless. "Facts are indeed stubborn things," and all the sarcasm and verbiage of our witty doctor will not nullify them. Again comes another burst of grandiloquence. "Here (says our funny doctor) I would take leave to remark, that the worthy gentleman aforesaid exhibited singularly good sense and exquisite statesmanship in wishing to place Medical Botanists on a register established by an Act, the preamble of which states that it is enacted because it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners. (Hear, hear, and laughter.) But, though doubtless the register would, by the adoption of his suggestion, have been rendered much more valuable for the purpose it was designed to serve, that consideration must sink into insignificance when compared with that of the overwhelming *honour* which would have been conferred on the graduates, fellows, licentiates, and members of the universities, learned bodies and corporations, by placing their names in the same register as that containing those of the far more learned, distinguished, and highly qualified *medical botanists*. (Laughter and applause.) Had his proposition been carried, surely a grateful public would have had rejoicings and bonfires over the length and breadth of the land, with transparencies ornamented with names culled from the choicest of

those to be found in the register, which was to enable the said public to distinguish between qualified and unqualified practitioners, as thus: Coffin and Christison, Ferguson, Holloway, Simpson, Erichsen, Nadin, and Watson, and Allison, Guthrie, and Torrens. (Loud laughter and applause.) With regard to the class of gentlemen whom Mr. Hadfield delighted to honour, I will only say, that but for the profound wisdom of an enlightened British public, it would soon cease to exist; and with regard to their defender and supporter, I will merely amend the preamble to the Act, and say that it is desirable that legislators should be able to distinguish qualified from unqualified practitioners."

If merit, with its concomitant success, were the test of honour (which indeed they ought to be), honour would be conferred upon the various bodies, &c., alluded to, by their names being placed in connection with the agents and practitioners of Dr. COFFIN'S system, and even were we to add the learned Dr. Smith to our list. It is the distinguishing mark of a noble mind to give honour where honour is due, irrespective of either position or money qualification; and much as the Sheffield doctor might think himself dishonoured by his name being placed beside ours, and much would he consider himself to be honoured, we infer, by his name being in company with a medical baronet, we should deem it a disgrace to us as honest men to be classed with—Sir Everard Home, one who was appointed to make a catalogue of the celebrated John Hunter's collection of anatomical subjects, and after the lapse of ten years, produced nothing, but was engaged during that time in making extracts from Hunter's invaluable manuscripts, palming such off and publishing them as his own, and consummating his villany by burning the manuscripts of that most eminent man (see Westminster Review for July, 1858). Here is a pretty sample of sterling honour with a witness! But he had baronet attached to his name. We could cite more examples of the honourable men we should, by our learned doctor's account, dishonour, by being classed with. But this is enough for once, and we continue.

Unprecedented success has attended our practice, and the grateful thanks of myriads of mankind hallow our cause; may we ask how many grateful patients can Dr. Smith muster? Our agent Mr. Nadin, who comes under the Sheffield doctor's lash, will gladly join issue with him upon this score; and we are sure that we, Dr. Coffin's practitioners, can bring forward more grateful individuals from the public than can an equal number from all the learned bodies, &c., &c., whom we should, according to Dr. Smith's inference, have dishonoured by being classed with, not even excepting Dr. Smith himself.

Again, if merit, united with sound practice, based upon a paramount love for the science of medicine, joined to much experience, did enable the practitioners of Dr. COFFIN'S system to register in accordance with Mr. Hadfield's proposition, there would not be one unregistered; but because we have not been to the schools, and, what is more momentous, *paid the fees*, we are excluded. Dr. Smith and the worthy framers of the Bill may well be in favour of it. Well knowing the weakness of their cause, they were obliged to hedge themselves round with governmental restrictions and protection; not that the medical framers of the Bill had the good of mankind truly at heart, but the prevention of others, proved even more capable than themselves, from entering upon that field they styled their exclusive domain.

By an application to the register, the people will be enabled to discover who are and who are not the law-qualified practitioners, which Dr. Smith will be able to prove, not only by application, but by the great majority even of his fellow townsmen having recourse in time of need, to Dr. COFFIN'S agent and system. The inhabitants of Sheffield, numbers of whom have been permanently benefited by Dr. COFFIN'S system, will exemplify to Dr. Smith, who ought to be the qualified practitioners, and who are, in point of fact, practically more deserving of all rights and privileges than the adherents of the poisoning, depletory system of the allopaths.

Not content with repudiating the Medical Botanists as a whole, our learned Sheffield doctor must individualise and

bring our esteemed head, Dr. COFFIN, upon the carpet! Verily, "where ignorance is bliss, 'tis folly to be wise." We would ask what Dr. Smith really knows of Dr. COFFIN'S system—whether anything? and if nothing, he is a very incompetent personage to give an opinion. For Dr. Smith's edification we will state, and fearlessly challenge him to prove the contrary, that Dr. COFFIN has, by his system and practice, done more good and cured more patients than any medical man of the same standing, and that his publications have disseminated more truths and sterling facts in the practice of medicine than all the allopathic annals can boast of through all their creeping, dark duration; and to bring the subject more immediately home to Dr. Smith in his own locality, where at least his learning, his talents, his experience, his cures and success, ought to be properly appreciated, they being within the knowledge of all, we will give a few examples of what Dr. Coffin has done in Sheffield, and how his labours have been appreciated. He was the first who discovered and applied the remedy for that disease to which the grinders are so peculiarly subject; and to evince their gratitude for his meritorious services in the cause of suffering humanity, they publicly presented him with a first-rate set of table knives, and a further public presentation of a splendid Britannia silver-mounted breakfast set. Let Dr. Smith *(of course condescend)* to inquire, and he will find many thousands in his locality who will bless the name of Dr. COFFIN, and hail him as the preserver of their lives. We will now ask, What cures has Dr. Smith wrought? what success has attended his practice? and whether he has received any of those distinguishing presents which prove the gratitude of the givers, and mark the merit of the recipient.

Dr. COFFIN promulgated his system, based upon the great laws of nature, and thereby assisting her efforts to expel disease, has incontrovertibly demonstrated its truth. Hundreds of thousands have been permanently benefited by it; and it requires no prophet to foretel that it will inevitably triumph over all allopathic poisoning, depletory treatment. He has repeatedly and repeatedly challenged the whole host of diplomatised men to meet him, and none dared; and we have no doubt, that if the learned Dr Smith wishes to come forward, Dr. COFFIN will meet him also.

The publishers of great truths have invariably had to combat with pride, prejudice and ignorance. Galileo, under pain of a life incarceration, or death, was made to recant the glorious truths he gave to the world. The glorious and immortal Harvey suffered every contumely by the medical bodies of his day for promulgating the doctrine of the circulation of the blood. All that these luminaries advanced has proved true, and all that Dr. COFFIN has written and done will, in like manner, dispel the clouds of slander, malevolence, prejudice and ignorance, and his system will stand pre-eminent in all its simplicity and grandeur.

HABET.

CORONER'S INQUEST.

ON Thursday evening, August 5th, an inquiry was gone into before Mr. Coroner Baker and jury, at Mr. Keymer's, City of Paris Tavern, Old Ford Road, Bethnal Green, on the body of Mary Ann Keadon, aged twenty-nine years, who died of sore throat. The proceedings created unusual interest, as the medical attendant raised a report that the deceased had taken deleterious herbs, which might have caused her death.

It appeared from the evidence that the deceased was the wife of a missionary, residing at 22, King Street, Green Street, and had enjoyed a good state of health until Tuesday week, when she complained of sore throat. Her husband wished to call in the aid of a medical man, but she refused to have one, and sent for several kinds of herbs, viz., pennyroyal, yarrow, and valerian, which were administered to her by her husband. On Sunday morning, about four o'clock, she became worse, when her husband ran for Mr. Meldola, a surgeon, who promptly attended. A mustard poultice was applied to her throat, and other remedies were adopted, but she expired in half an hour afterwards.

Mr. Meldola, surgeon, deposed that he had made a post-mortem examination in conjunction with Mr. Dyte, and the cause

of death was found to be from suffocation through an accumulation of lymph in the throat.

Joseph I. Keadon, the husband, had been married to the deceased eight years. Deceased had been in the habit of taking herb medicines; he had advised her to have medical aid, but she frequently said, "Don't call in a medical man, for I can do myself more good than a doctor could."

At this stage of the proceedings Mr. Stephens, agent of the well-known Dr. COFFIN, entered the room and said, "Mr. Coroner, on behalf, and at the request, of the friends of the deceased, I beg to ask on what grounds, and upon whose information, this inquest is being held?"

Coroner: "Upon the best of all possible grounds, information of the parish constable."

Mr. Stephens: "This inquest is illegal and uncalled for, and ought not to have been held. It has only been instituted for the sake of the fees."

Coroner: "If you interrupt the business of the court, I shall order you out of the room."

Mr. Stephens: "Although we cannot prevent these proceedings, a representation shall be made to the county magistrates to withhold the expenses."

Coroner: "I have sent Mr. Stephens twice to the Old Bailey for trial, on charges of manslaughter, *but he was acquitted*, and he has been prosecuted by the Apothecaries' Company for practising without a license; for the latter, he was fined £20, and £19 costs, but still he is carrying on his agency at Ratcliff Highway, and he boasts, that he has £50 more, ready for the next prosecution."

Mr. Stephens reminded the Coroner that it was not twice, but only once, that he had the honour of vindicating Medical Botany at the bar of the Old Bailey; that Medical Botanists had always beat him, the Coroner, on previous occasions, and would beat him again this afternoon.

Coroner: "Well, gentlemen, I suppose you are of opinion that this is a proper inquiry;" and having obtained their assent, after a few more observations, the jury found the following verdict:—

"That the deceased died from diptheria, causing an accumulation of lymph in the thro$_a$t, and suffocation."

A strong protest, numerously signed, was forwarded to the Court of Magistrates against the necessity of an inquest in this case, and the legality of ordering a *post-mortem* on such evidence. It doubtless had a good effect, as the expenses on *nine* of Mr. Baker's cases were disallowed this day, October, 14th.

JOHN STEPHENS.

P.S. I have stripped this report of all extraneous matter, evidently introduced to give it a colour and to work upon the jury, such as "poisonous herbs, advice sooner, sale of poisons, unqualified practitioners," &c., &c.; but I have given all the facts that bear on the case.—J. S.

MEDICAL EDUCATION.

(Continued from page 17.)

EXCLUSION of surgeons, apothecaries, and accoucheurs, from the fellowship, was effected, we are told, by Sir Henry Halford, in order to keep the college "respectable and distinct." The same authority states, and his statement is echoed by all the college defenders, that, with the exception of the few favoured nominees of the president, the fellowship was conferred exclusively on graduates of Oxford and Cambridge, because the college can be most satisfactorily assured of their literary and scientific education, and of their moral habits.

In view of the evidence given to the Parliamentary Committee of 1834, of the value of Oxford and Cambridge medical education and medical degrees, we must presume that they commended themselves to the exclusive approval of the college by means of some mystic virtues, cognisable only by the esoteric and initiated fellows.

From the establishment of the College of Physicians to the present time, its distinguished members, whether fellows or licentiates, have been compelled to resort to other places than either Oxford or Cambridge for their professional knowledge. Harvey, though a Cambridge man, studied and graduated at Padua, which, in conjunction with Leyden, really educated the majority of English physicians until Edinburgh became famous as a school of medicine. The stanchest defenders of the restrictive system are constrained to confess in word and deed the

futility of attempting to obtain a medical education at either of the English Universities. The late Dr. Seymour, who naively told the committee he did not know what was "meant, exactly, by medical reform," and who, though willing to have the college doors opened a little wider, thought "that the regular road should still be kept through the English Universities," studied three years at Edinburgh, one at Paris, and one at Florence; that redoubtable conservative, Dr. Macmichael, who is a devout believer in the English Universities, studied three years at Edinburgh, and afterwards became a pupil at St. Bartholomew's Hospital. Dr. Seymour tells us that the physicians of Ofen were ignorant of the existence of the Oxford and Cambridge medical schools, and looked on the map to find the University of Cambridge; while Dr. Elliotson, when asked what opinion he found prevalent abroad concerning the English universities as schools of medicine, said that he "never heard them mentioned." Dr. Macmichael admits that even so late as when he was at Oxford, no lectures were delivered on physiology, pathology, materia medica, or therapeutics, and that no hospital practice was prescribed, the attendance being purely voluntary. Dr. Burrows, who graduated at Cambridge, simply attended lectures there on natural philosophy, chemistry, and the practice of medicine, before taking his degree: his real education he obtained in London. Dr. Kidd, the Regius Professor of Physic at Oxford, stated to the Parliamentary Committee that attendance on medical lectures at Oxford was not expected; and that certificates in proof of the various branches of medical study having been pursued in some other medical schools were not asked for from candidates for the Oxford degree. Regarding certificates, "The word of the individual given to the professor, and the knowledge of his habits, derivable from the professor's extensive acquaintance, were considered sufficient," says Dr. Kidd, and he, as examiner, acted on this opinion. Dr. Elliotson says, that not only was it not imperative to attend medical lectures at Cambridge, but that "there were none given, excepting some popular lectures by Sir Busick Harwood, on physiology, in which he used to show the process of incubation by having one-and-twenty eggs of different ages, so as to see them crack." Such being the facilities afforded for scientific study, and such the medical discipline of the students, our readers will of course conclude that the authorities of Oxford and Cambridge relied mainly on the scrupulous and searching character of their examinations, in order to guard against conferring degrees on unqualified persons, and to justify the childlike trust of the College of Physicians in their diplomas as the most satisfactory evidence of "literary and scientific education, and of moral habits."

Dr. Macmichael, who graduated at Oxford, was examined by only one professor; the examination lasted "a very short time," and he admits that payment of the fees was the chief qualification for the reception of the degree. Attendance on the hospital "was entirely voluntary on your part?—I paid the fees. That was not essential to your passing your examination before the Regius Professor?—It enabled me to pass it better." The following is Dr. Elliotson's account of the examination for his Cambridge degree: "I read a thesis which I had composed in Latin. I read it aloud to the medical professor in public, and he brought two or three objections against it in Latin, syllogistically, which I answered in the same language and manner, and then I think he read a paper, and I had to oppose or defend it, I forget which."—"Was the examination after reading your thesis severe?—There was none at all. Was the examination you underwent any sort of test of your proficiency in medical studies?—I do not know. I suppose very slight medical knowledge would have been sufficient to answer the arguments adduced against me." Such was the course of examintion for resident students, which had continued from a very distant period at Cambridge until 1829, and at Oxford until 1835, according to the testimony of resident graduates. Whether the examination for *ad eundem* degrees were precisely the same, or still more absurd, we cannot tell, but holders of those degrees shall give us their experience. Dr. Billing, who first graduated

at Dublin, and then at Oxford, in 1818, says, "I entered my name at St. Alban's Hall, and the following day I went into the senate-house to perform certain acts of reading over some syllogisms. I took some oaths of allegiance and so forth; and then the Vice-chancellor went through a short form, by which I was declared an Oxford Doctor of Medicine." He adds, that there was no medical examination whatever. Dr. Clendinning, also a graduate of Dublin, took an Oxford degree in 1827. He says, "I underwent no examination; there was a form of disputation, but no *vivâ voce* examination, nor any written questions on medical subjects." Dr. Clendinning's replies, in the following extract, are too precious to be abridged. "Did you keep an Act in Physic?—Yes. Was that a mere form?—I think it may be considered a mere form. Did you read a Latin thesis?—Yes. Were you examined by the professor upon the subject of the thesis?—The professor was not present. Who was present?—The gentleman-bedel. Was it not considered a mere ceremony?—Yes. Was the thesis written especially for that occasion?—I suppose I ought to state that I did not write the thesis; it was written for me, and produced, and I read it, and the counterpart was read by the bedel." The Regius Professor demonstrated the wisdom of this arrangement by which the bedel is constituted sole auditor, thus: "In order to take the bachelor of medicine degree there are two formal disputations. The professor attends at these; but in taking the superior degree, the person who reads the lecture is supposed to be giving information to others; and then the professor does not attend." One more extract concerning the all-important functions of the bedel; also, the authoritative statement of the Regius Professor himself shall close our evidence of the inconceivable value, intellectually, of English university degrees. The bachelor's degree having been already taken, "how many acts and opponencies must be kept for the doctorate?—None. The candidate must previously read six lectiones in the public schools. Are they all read in one day?—In two days, I think. Three a day?—Yes. It is usual to compose a lectio really for the occasion; or does any scrap of paper, or book, read at the time, serve the purpose?—That entirely depends upon the individual, for nobody is present but himself and the bedel. Does the bedel generally provide the lectio?—I am sure I do not know how that is . . . He does so occasionally, I believe." Readers who have resided at an university will probably exclaim—"Oh! everybody knows that the examination for the degree of doctor of medicine was a mere form, but it was so simply because the candidate passed a previous examination for the degree of bachelor of medicine, which was a *bonâ fide* test of medical knowledge and skill." We are enabled, however, to show, from the evidence of the Oxford Regius Professor himself (the late Dr. Kidd) that "it was considered that in lieu of a formal examination, the professor of medicine, or whoever in his place presented to a degree, might satisfy himself that the candidate was well grounded in it, and upon his testimony the university granted the degree." During the worst of times the St. Andrew's degree of M.D. was never conferred unless the professional ability of the candidate was certified for by one or more distinguished physicians, so that it was never purchaseable in any other sense than was that of Oxford.

The moral discipline and scrutiny of character to which Oxford and Cambridge graduates were subjected, were only equalled by the scientific culture and exhaustive examination which, as we have shown, their diplomas imply that they have undergone. It seems that all who go to their universities for *ad eundem* degrees are so intensely moral that it is deemed to be no more requisite to ask for evidence of character than it is to demand from resident graduates certificates of professional study. The Parliamentary Committee asked Dr. Clendinning, "Was any certificate of your moral character and habits required by the professor of physic at Oxford previous to your passing?" He replied, "None whatever." Dr. Billing, in answer to a similar question, said, "there was a form which is called *bene decessit*, from Dublin; that was all;" and that he had never heard of an instance of the said *bene decessit* being refused by the Dublin

college. So that either the morals of all Dublin graduates who ask for the *bene decessit* are unimpeachable, or the Hibernian *Alma Mater* indulgently dispenses it to all needing it on the mere production of their diplomas. Its value as a testimonial of character, if the latter inference should be nearest the truth, we leave our readers to determine. Of those graduates who keep their terms at the English universities, some at Cambridge do not reside within the walls of the colleges, yet it is to this residence that much of the university virtue is ascribed. Moreover, the system called "term trotting" is not unknown either to the English universities or to the College of Physicians. "Term trotting" is accomplished by "licentiates already established in London, who perform the formal exercises, and go through the formal residence required by those universities to obtain from them medical degrees." Such is the intellectual and moral discipline of which the College of Physicians was assured by the presentation of an Oxford or Cambridge degree!

Much has been said about the worthlessness of Scotch degrees, especially those of St. Andrew's, just referred to. But though the latter could make no pretension to the incomparable respectability of those procured at Oxford or Cambridge, seeing that they proved their possessors to be rich enough to waste eleven years in keeping their terms at one of these Universities, yet a degree from St. Andrew's was a reliable testimonial of professional competency, which deserved, if it did not command, respect at a time when reading a bought thesis to the university bedel, and paying the fees, constituted the dignifying process by which a man became an Oxford Doctor of Medicine. We have stated that that system obtained at Oxford until as late as 1835; whereas, as early as 1826, a man was not admissible as a candidate for examination at St. Andrew's until he produced certificates that he had "attended in some university or celebrated school of medicine for at least four complete sessions, during four years, the following branches of medical education:—anatomy and surgery; practical anatomy, or private dissections; materia medica and pharmacy; chemistry and chemical pharmacy; the theory of physic; the practice of physic; midwifery, and the diseases of women and children; botany, and clinical lectures in a large public hospital. The candidate must also bring certificates of his having attended the daily visitations of the physicians and surgeons of such hospital for at least six months a year during two different years." The relative value of the examination test itself may be estimated as follows:—From 1834 to 1848, 549 candidates offered themselves; of those 82 were rejected, or nearly a seventh of the whole. During the ten years ending 1855, 567 candidates offered themselves; of these 70 were rejected, or about an eighth of the whole. Whereas, throughout the United Kingdom, of all the candidates for diplomas during the same ten years, only one in nine were rejected. A large proportion of those who were rejected are members of the London College of Surgeons, and many of these are also licentiates of the London Apothecaries' Company. Seven members of the London College were rejected between May, 1847, and July, 1848. We are informed that of the last eighty rejected candidates, thirty-nine held the diploma of the same college. The examination as now conducted is both in writing and *vivâ voce*, it extends over several days, it is both scientific and practical, and its general excellence is reported and admired by the medical journals of the present year. In this connection it is due to the new Regius Professor of Physic at Oxford, Dr. Acland, to say that the examination papers submitted this month (June) to the candidates for the degree of Bachelor of Medicine do him great honour. They are the most comprehensive, discriminating, and effectual, as tests of professional education, of any that we have seen.

(To be continued.)

Effects of Illuminating Materials in Vitiating the Air.—It has been found by experiment, it is said, that lights of the same intensity from different substances take different periods to vitiate the same quantity of air, by converting it into carbonic acid. Rape oil, 71 minutes; olive oil, 72; Russian tallow, 75; common tallow, 76; sperm oil, 76; stearic acid, 77; wax candles, 79; spermaceti candles, 83; common coal gas, 98; cannel coal gas, 152.

A MEDICAL GLOSSARY, OR EXPLANATION OF TERMS.

(Concluded from page 23.)

Pathognomic—a term given to those symptoms which are peculiar to a disease.

Pernio—a chilblain.

Phlegmon—an inflammatory tumor.

Phagedænic—a foul ulcer, that spreads rapidly.

Phymosis—a contraction of the foreskin, so that it cannot be drawn back over the glans penis.

Polypus—a fleshy substance that grows in the nose and other parts.

Priapism—a continued erection of the penis.

Prognosis—the judgment of the event of a disease by particular symptoms.

Prolapsus—a protrusion or falling down of any part within itself, as when the lower bowel falls down and is inverted by passing through a part of its own canal.

Pterygium—an excrescence growing upon the inner canthus of the eye.

Pus—matter. A secretion from ulcers and abscesses, that resembles cream in appearance.

Ranula—a tumor under the tongue, supposed by the ancients to make the person croak like a frog.

Sarcoma—a fleshy excrescence.

Scirrhus—a conversion of a part into a hard, indolent tumor, not readily suppurating.

Scrofula—the king's evil. A disease of the lymphatic glands.

Sedatives—those medicines which diminish the animal energy without destroying life.

Specifics—such remedies as have an infallible efficacy in the cure of disorders.

Sphacelus—a mortification of any part.

Staphyloraphy—the operation for uniting a cleft palate.

Steatoma—an encysted tumor, the contents of which are like suet.

Stimulants—medicines which excite the animal energy.

Strangury—a difficulty of making water.

Styptics—those substances which possess a power of stopping hæmorrhages.

Suppuration—the formation of pus in phlegmonous tumors.

Sympathy—consent of parts.

Syphilis—the venereal disease.

Tetanus—spasm, with rigidity of the part under the spasm.

Trichiasis—a disease of the eyelashes, in which they are turned inwards.

Ulcer—a purulent solution of continuity of the soft parts of an animal body.

Varicocele—a swelling of the veins of the scrotum or spermatic cord.

Vesicatories—substances which increase the action of the vessels in those parts of the surface of the body to which they are applied, and cause a vesication or blister.

Vomica—an abscess; generally applied to suppuration of the lungs.

CURE OF FEVER BY MEDICO-BOTANIC TREATMENT.

TO DR. COFFIN.

Sir,—I have seen and felt the advantage of Medical Botany, having been twice under the treatment of Mr. Thomas Feraday, practitioner of Medical Botany, Brierly Hill, the first time with ulcerated sore throat and strong fever, and was cured of the same in a fortnight, though expected to die by my wife and friends. Since then, five of my children have been very ill with scarlet fever, and cured of the same with the same success, leaving them free and clear from any complaint, and myself with a severe attack in my throat, which Mr. Feraday cured in three days. I think it my duty to my fellow man and to the public at large to make the above known for the benefit of suffering humanity.

Thomas Hampton.

Pensnett, October 11*th*, 1858.

LECTURES IN OXFORD,

ON DR. COFFIN'S MEDICO-BOTANIC SYSTEM.

Two lectures upon the above system were given in Oxford by our talented Agent, Mr. B. V. Scott, on the 7th and 8th inst. The subject of the first was, "Botanic Remedies versus Minerals." During the lecture, he most satisfactorily proved to his audience, which was numerous, the paramount superiority of Dr. Coffin's system compared with the practice of the allopaths, in their dispensing the mineral remedies, alias mineral poisons; and perfectly succeeded in showing that, whilst our botanical remedies and system

act in harmony and accordance with nature, and assisting her in eradicating disease, the minerals act in opposition to all her laws and hasten death. The second lecture was upon disease, inflammation, bleeding and blistering, in which he was equally happy in incontestably proving the fallacy of the two latter as being conducive to recovery, and that fever was not disease, but an effort of nature to rid herself of that disturbance and want of equilibrium in the human system, induced by cold, &c., which would have caused the speedy dissolution of the subject; also showing that allopathic treatment is a great blunder, and that Dr. Coffin's botanic system of treating disease is the most rational ever introduced.

Mr. Scott both evenings openly challenged all the allopaths in Oxford to rebut his arguments, but they, well knowing the weakness of their cause, dared not come forward. Thus will our system of Medical Botany triumph!

VARIETIES.

The first ingredient in conversation is truth the next, good sense; the third, good humour; and the fourth, wit.

Actions and Words.—Actions speak more forcibly than words; they are the test of character. Like fruit upon the tree, they show the nature of the man; while motives, like the sap, are hidden from our view.

Novel Application of Artillery.—A road contractor in France, near the Pyrenees, having lately found the process of blasting an overhanging rock rather difficult, and a mortar battery of the 10th Regiment happening to be passing along, he telegraphed to Paris for leave to open fire upon a crag seventy yards above the road, over which it impended. A few rounds of ten-inch shell soon brought the entire mass to fragments. About ten minutes served for the operation.

Constant Employment.—The man who is obliged to be constantly employed to earn the necessaries of life and support his family, knows not the unhappiness he prays for when he desires wealth and idleness. To be constantly busy is to be always happy. Persons who have suddenly acquired wealth, broken up their active pursuits, and begun to live at their ease, waste away, and die in a very short time. Thousands would have been blessings to the world, and added to the common stock of happiness, if they had been content to remain in an humble sphere, and earned every mouthful of food that nourished their bodies. Persons who are always busy, and go cheerfully to their daily tasks, are the least disturbed by the fluctuation of business, and at night sleep with perfect composure.

Education.—Education does not commence with the alphabet. It begins with a mother's look—with a father's nod of approbation or a sign of reproof—with a sister's gentle pressure of the hand, or a brother's noble act of forbearance—with handfuls of flowers in green and daisy meadows; with birds' nests admired but not touched; with creeping ants and almost imperceptible emmets; with humming bees and glass bee-hives; with pleasant walks in shady lanes, and with thought directed, in sweet and kindly tones and words, to nature, to beauty, to acts of benevolence, to deeds of virtue and to the centre of all good—to God himself.

Electric Illuminations under Water.—Some attempts recently made at Paris towards illuminating the bottom beneath the water, possess considerable interest in a scientific point of view. The electrodes of carbon were placed in a glass globe, being connected with one of Dubosq's regulators, which communicated with the battery by a copper wire covered with gutta percha. The globe submerged to a depth of fifteen feet, spread light over a circumference of thirty feet radius, and it remained constant for two hours, after which the carbon required replacing. Dubosq's arrangement is light, so that a submarine diver may carry it in his hand, and at the same time it is strong and well secured hermetically to resist a pressure of six hundred pounds of sea water. It consists of a cylinder of strong glass, secured to a brass foot, and surrounded with a gutta percha sack. The light passes out through a large plano-convex lens, with the convexity inward, the focus being so arranged that the rays escape nearly parallel. As the lamp is moveable, the diver walks about with it, and places it in the proper relation to the point where he wishes to make any search; and as it is only necessary to bring the electrodes near one another to light it, the diver need only turn a small screw to continue the light for two hours which is more than twice as long as he can remain at the bottom.

NOTICES.

Mr. F. R. Coles will be helped over the little obstacle, by directing his attention to the title of the article to which he has alluded. Mr. C. will find that it is an extract, and not our writing. We do not deviate one tittle from our practice as laid down in Dr. Coffin's "Guide," but have merely let the text stand to shew the difference between our practice and that of the Author, whose works contain such an abundance of truths that ought to be widely diseminated, though we do not advocate the use either of iron or *quinine*.

BOTANIC SOIREE.

The Friends and Admirers of Dr. Coffin's system of Medical Botany are informed that a Botanic Soiree will take place in the Cutlers' Hall, Sheffield, on November 2nd, 1858, in aid of the Hospital Funds, when Dr. Coffin, of London, John Waters, Esq., M.R.C.S., London,

George Caldwell, Esq., M.R.C.S., Birmingham, Rev. William Taylor, London, and other gentlemen will be present and address the meeting.

A party of Vocalists from the Choral and Instrumental Society, consisting of Miss Varney, Miss Barton, Miss Baines, Miss Harrison, Mr. Lee, Mr. Twigg, Mr. Barton, Mr. Hammerton, Mr. Hydes, Mr. Allows (Mr. H. Parkes, Conductor), who have kindly given their services on this occasion, and will sing a selection of English Madrigals, Glees, etc.

Tickets, 1s. each, to be had of Mr. NADEN, Dr. COFFIN's Agent, 204½, Shales-moor; Mr. Woodcock, Botanist, Duke-street, Park; Mr. Ingham, Printer, South-street, Sheffield Moor. Tea on the table at five o'clock.

A BAZAAR will also be held at the Cutlers' Hall, on the same day, Tuesday, Nov. 2nd, for the sale of useful and fancy goods. Doors to be open at eleven o'clock. Admission free.

FORD'S
CELEBRATED TRICOPHEROUS.

The best-approved application for cleansing, beautifying, preserving and reviving the hair. It should be used by all persons recovering from fever, or any other illness, as it restores the tone of the cutical secretions, and gives a healthiness to the hair and skin.

Sold at W. B. FORD'S Establishments, 134, High Holborn, and 24, Union Street East, Spitalfields, in four-ounce bottles, at 1*s.* 3*d.* each.

J. STEPHENS,

Eight years accredited Agent to Dr. COFFIN, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

Visits to Patients, 2*s.* 6*d.*, in advance.

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Keeps constantly on hand all the Remedies used in Dr. COFFIN'S Practice; also Dr. COFFIN'S "Guide to Health," "Treatise on Midwifery," "Treatise on the Generative Organs," "A Course of Twelve Lectures," and "Botanical Journal."

Mr. NADEN is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

34, WORCESTER STREET,

Sole Agent for Dr. COFFIN in Birmingham, from whom all the Herbs, Roots, Barks, and preparations used in the Botanic Practice, can be had genuine.

Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague Place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from *ten to one* o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

ANATOMICAL AND BOTANICAL DRAWINGS.

The Editor has several sets of the above on hand for sale.

These Drawings are highly extolled, declared to be most excellent, and are astonishingly low in price.

A set of 5, beautifully coloured by hand, from	25*s.*
A single Drawing	7*s.* 6*d.*
A set of 12 of our Medical Herbs, beautifully coloured from Nature	24*s.*
A single Drawing	2*s.* 6*d.*

For further descriptions see the eighth vol. of our Journal, page 168.

THE OXFORD PIONEER OF MEDICAL BOTANY,

Explanatory of the Principles of Botanic Treatment; to which is added a compact Pharmacopœia of Botanic Medicines, by

BENJAMIN V. SCOTT,

Medical Botanist, and Agent for Dr. COFFIN, founder of the Botanic System in England,

5, MARKET PLACE, OXFORD.

Price Twopence, or Threepence by post; or Twelve copies free by post for Two Shillings.

This really is a very valuable little work, being a clear, concise and just exposition of our Medico-Botanic principles. The compact Pharmacopœia appended is certainly a desideratum. No family in the United Kingdom ought to be without a copy. This, read in conjunction with Dr. COFFIN'S "Treatise on Blood-letting and Fever," must convince all who are not wilfully prejudiced, and blind to conviction, of the unsophisticated truth of Dr. COFFIN'S Medico-Botanical System and Practice.

NOTICES TO CORRESPONDENTS.

POST-OFFICE ORDERS and all communications for goods, &c. to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 274.—Vol. IX. SATURDAY, NOVEMBER 13, 1858. Price 1d.

THE GLEANER, No. 20.

GROWTH OF THE TEETH AND BONES.

The teeth being a surer guide to the age of youth than their height, government has adopted it as the test for the young employed in our factories. We have therefore inserted the following table, for the information of our readers:

Central incisors developed at		8	years
Lateral	„ „	9	„
First bicuspid	„	10	„
Second „	„	11	„
Canines	„	12	to 12½
Second molars	„	12½	„ 14

In no instance has the teeth test caused a child to be estimated as older or more fit for labour than it really was.

The period of *youth* is distinguished by that advance in the evolution of the generative apparatus in both sexes, and by that acquirement of its power of functional activity which constitutes the state of *puberty*. Of the principal changes in which this consists, in the two sexes respectively, it is necessary to add, that this augmented development can only be rightly regarded as *preparatory* to the exercise of these organs, and not as showing that the aptitude for their exercise has been already fully attained. It is only when the growth and development of the individual are completed, that the procreative power can be properly exerted for continuance of the *race;* and all experience shows, that by prematurely and unrestrainedly yielding to the sexual instincts, not merely the generative power is early exhausted, but the vital powers of the organism generally are reduced and permanently enfeebled, so that any latent disposition to disease is extremely liable to manifest itself; or the bodily vigour, if for a time retained with little deterioration, early undergoes a marked diminution.

After the attainment of puberty, no marked alteration takes place in the organism, save the continuance of its increase in stature, usually for a few years longer, which increase is the chief manifestation of the excess of the germinal capacity, that has not yet expended itself in the building up of the fabric; but, so long as this increase is going on, there is a want of that solidity and compactness of the organism which seem only attainable when growth has ceased, and the attainment of which being essential to the highest manifestations of vigour and endurance, marks the final completion of its development. Of this we have the best illustration in the *osseous* system, whose completion being postponed until all further *growth* has ceased, may be fairly considered as marking the final stage in the development of the organism, and as, therefore, characterising the period of *adolescence*. Commencing with the *vertebral column*, we find that whilst the body and neural arches of each vertebra become consolidated in early childhood, the spinous and transverse processes are completed by separate epiphyses, the ossification of which does not commence until after puberty, and the final union of which with the body of the bone may not occur until the age of twenty-five or thirty years. About the same time there is formed and added to each surface of the body of the vertebra, a smooth

annular plate of solid bone, which covers a portion that was previously rough and fissured. During this period, the consolidation of the sacrum is proceeding, the component vertebræ of which remain separate up to about the sixteenth year; and then begin to unite from below upwards, the union of the two highest being completed by about the twenty-fifth or thirtieth year; whilst at the same time, thin osseous plates are formed on either side of the coalesced mass, which seem to represent the epiphyses of the transverse processes of its component vertebræ, and like them are finally joined on to the body of the bone. The ossification and coalescence of the coccigeal vertebræ take place at a little later period. Each rib, in like manner, has two epiphyses, one for the head and the other for the tubercle, the ossification of which begins soon after puberty, whilst their union with the body of the bone is not completed until some years afterwards. The five pieces of which the sternum consists, though themselves completely ossified, remain separate until after the age of puberty, when their union commences from below upwards, as in the sacrum, not being always completed, however, even in old age, by the junction of the first piece to the rest of the bone. The ossification of the ensiform cartilage does not commonly begin until after the age of puberty, and it is usually not entirely completed even in very advanced life. The ossific union of the separate elements of the *bones of the skull* is usually completed within a few years after birth; but there are some parts which not unfrequently remain distinct during the greater portion of life, and which may even never coalesce: such is the case with the two halves of the frontal bone, which often remain permanently divided by a continuation of the sagittal suture, and with the styloid process of the temporal bone. In the *upper extremities*, we find the scapula presenting three epiphyses, one of the coracoid process, one for the acromion, and one for the lower angle of the bone, the ossification of which begins soon after puberty, their union with the body of the bone taking place between the ages of twenty-two and twenty-five years. The clavicle has an epiphysis at its sternal end, which begins to form between the eighteenth and twentieth years, and is united to the rest of the bone a few years later. The consolidation of the humerus is completed rather earlier: the large piece at the upper end, which is formed by the coalescence of the ossific centres of the head and two tuberosities, unites with the shaft at about the twentieth year, whilst its lower extremity is completed by the junction of the external condyle and of the two parts of the articulating surface (previously united to each other), at about the seventeenth year, and by that of the internal condyle in the year following. The superior epiphyses of the radius and ulna unite with their respective shafts at about the age of puberty; the inferior, which are of larger size, at about the twentieth year. The epiphyses of the metacarpal and phalangeal bones are united to their principals at about the twentieth year. In the lower extremities, the process of ossification is completed at nearly the same periods as that of the corresponding parts of the upper. The consolidation of the ilium, ischium and pubes, to form the os innominatum, by the ossification of the triradiate cartilage that intervenes between them in the acetabulum, does not take place until after the period of puberty, and at this time additional epiphyses begin to make their appearance on the crest of the ilium on its anterior inferior spine, on the tuberosity of the ischium, and on the inner margin of the pubes, which are not finally joined to the bone until the twenty-fifth year.

TO MEDICAL BOTANISTS.

"There is a tide in the affairs of men, which, taken at the flood, leads on to fortune; but, if then neglected, it never more returns."

TAKING the above for my motto, I am induced to ask, Is not now the most fitting time to call upon all who are favourable to Medical Botany and the simples of nature in the cure of disease, to step forth, make their honest avowal thereof, and prove their determined intention to pursue the system for the cure of all the forms of disease that may afflict ourselves or families, and aid and advise their use in preference to the unknown or mystified system we are threatened to be compelled

to succumb to? Wherefore we should be so compelled I am anxious to learn. The answer I anticipate would be, You know not how to treat yourself.—My reply to which would be, Who is therefore to blame? It is said, "the noblest study of mankind is man." If this is true, why are we not in our public schools, and private too, taught anatomy, physiology, and the method of warding off approaching sickness on its first appearance. Again, why is it that mothers are not taught how to treat and assist their offspring in disease? In this instance, what has civilisation done? Unfortunate children, handed over by equally unfortunately ignorant parents, to the treatment of those who, I might almost write, are equally ignorant how to treat the ills the poor unfortunates are heirs to.

But why should it be so? Go ask the heathen mother! Does she wait the attendance of man before she supplies relief to her afflicted child? Hark the reverberating echo! "No!! No!!! I treat them myself, I want no other help." Nor does she require the man-midwife, but acts upon the plain, unerring laws of nature, and in this respect how much superior are those laws than man's! Instinct seldom errs—art often does.

Finding I have digressed farther than I intended, I must recall my thoughts to my first intention, that of a general meeting of all favourable to the simple means afforded by nature in our own country. Let it not be a limited invitation, but a general one, convened in London, to which invite all, wheresoever they may reside and whomsoever they may be. Get names subscribed to a monster petition, and get it laid before government, to prove we are determined not to be compelled to swallow in blind ignorance what a few interested pretenders may desire to palm upon us.

Again: let lectures be given in all towns and villages, proving the superiority of the system over that of the drugging, depleting and lowering system they would enforce. By pursuing this plan, there cannot be a doubt but the botanic treatment would be established despite its opponents.

The teaching of anatomy—the properly studying disease in its various forms—the remedies—their powers and administration—will be matters for after consideration.

This, too, will be the proper moment to propose the establishment of a Botanic Hospital for the purpose of study under competent persons, who would teach the public at a small quarterly charge, to be paid in advance.

THOMAS COOPER.

Victoria Cottage, Walthamstow.

FACTS FOR FAMILIES.

From the "Destructive Art of Healing."

(*Continued from page* 19.)

TWENTY-TWO years will now have passed since I first announced to the medical world the possibility of treating very successfully all curable diseases without loss of blood. To the profession that "fact" was at first inconceivable. Statistics are now with me. We have now certain statistics in two diseases at least, which even at this time numbers of very honest men will not believe can be successfully treated without bloodletting—apoplexy and pneumonia—apoplexy and inflammation of the chest. What say the statistics of apoplexy? Dr. Copeman transcribes from his note-book no less than two hundred and fifty cases. The following are the results:—

Number bled, 129; cured, 51; died, 78.
Number *not* bled, 26; cured, 18; died, 8.

Which show that in cases where bleeding was practised, two out of three died; whereas in the cases treated without bloodletting, more than two out of three recovered!

How speak statistics in pneumonia? Disgusted with the fatal result of bleeding and tartar emetic in this remittent, inflammatory fever of the chest, Dr. Dietl, physician to one of the district hospitals of Vienna, determined to try simple ptisans, without bloodletting at all. The comparative results in a very large practice were the following:—Of patients bled, twenty and a fraction out of every hundred died; of patients not bled, only seven and a fraction per cent. gave up the ghost, showing a balance of three to one against bloodletting! But when treated after my own manner, with febrifuge re-

medies instead of ptisans, pneumonia will be found to exhibit results even more satisfactory than those of Dr. Dietl; and when chrono-thermally treated, apoplexy also will assuredly give a greater per-centage of recoveries than what we find in the statistics of Dr. Copeman, where bleeding was not employed.

The first English physician who in his writings adopted the peculiar views of disease and its treatment first propounded by myself in 1836, was Dr.—now Sir Henry—Holland, physician to the Queen. In 1839, Sir Henry published his *Medical Notes and Reflections*, in which he not only advocated the unity, intermittency, and periodicity of all disease, but wrote strongly against the depletory system of treatment in apoplexy. The court physician, like the court surgeon, had his own reasons doubtless for omitting all notice of my own prior discoveries in this field. Nor, according to my view of the case, did he act very honourably when taxed for want of candour in that respect. Elsewhere I have published a letter, in which the medical baronet not only very humbly deprecates "controversial publicity," but to stop my pen, privately makes the important admission that *his* views of the unity, intermittency, and periodicity of disease are one and all "subservient" to my own "larger conclusions." But when pressed to tell where he got his new ideas, he said he took them from "amid old notes." Old notes! By whom and from whom were these old notes taken? Sir Henry does not say. "Without expressing any opinion on the general doctrine you propose"—[his doctrine and mine being one and identical!]—"it gives me pleasure to know" (he writes), "that you find anything of truth or useful suggestion [!] in what I have published." And he hopes I shall be "satisfied on these points." With such an "explanation" I am of course satisfied—that—he—Sir Henry Holland—is not the only man in the profession who has shown a natural turn for—philosophic abstraction! Fragmentally, at least, the chrono-thermal theory of disease and its treatment has been adopted and pirated by many subsequent writers—Drs. Laycock, Searle, Forbes, Todd, Radcliffe, Ashburner, Marshall Hall, Sir B. Brodie, and others, having all, without acknowledgment, made a common property of my discoveries in particular diseases. But no medical writer has yet exceeded in audacity a certain Dr. Robert Dundas, of Liverpool, who, in 1852—mark the date, reader!—published a work which he entitles, "Sketches of Brazil, including *New Views* of Tropical and European Fever." In 1852 thus writes Dr. Robert Dundas:—

"I have *lately* looked attentively into the writings of the best modern authorities on the subject of fever. Here I find the various forms and the succession of the paroxysms in remittent and intermittent fever defined with a mathematical precision unfounded in nature, and showing that the writers (the "best modern authorities!") had not enjoyed the opportunity of observing these diseases as they actually prevail in different regions of the globe."—"I would ask whether, irrespective of all other evidence, the specific power exercised by proper doses of *quinine* (the active ingredient of the Peruvian bark) over all these several forms of fever does not afford conclusive proof, that in their essential nature, *these fevers are* IDENTICAL, *and differ only in form and degree?*"

From 1836 to the present hour, this "new" doctrine of Dr. Robert Dundas has been my own doctrine, over and over again reiterated in every publication to which I have placed my name. More particularly is it enforced in "*The Unity of Disease*" and "*The Fallacies of the Faculty*," which latter work has run through at least twenty editions. But to continue our quotations:—

"I apprehend, indeed, that the law of *periodicity*, or the disposition to remission and exacerbations at certain intervals, will *be found to apply more or less distinctly to all human diseases*—(the italics here are Dr. Dundas's own), to those arising in the most opposite conditions of the animal economy, and determined by morbific agents apparently the most dissimilar and opposite in their nature as well as in their results."

By way of confirmation of these "new views," Dr. Dundas, in the same page, commences in capital letters a "Parallel between Gout and Ague," which parallel the reader, on turning to the "Fallacy of

Physic," published in 1836, will find anticipated to the letter!

"Behold," Dr. Dundas exclaims, "the citizen, flushed and rubicund, groaning under a regular paroxysm of inflammatory gout; the peasant with his sallow, Hippocratic face and attenuated frame, shivering in the horrors of a paroxysm of ague. Observe them again in a few hours; both are restored apparently, and but apparently, to their ordinary health, to undergo, after a brief space, a repetition of their previous sufferings, followed by another remission. Here clearly is periodicity as distinct and well marked in the gorged and gouty alderman as in the half-starved, aguish peasant. But it may be urged that the analogy is incomplete; that gout exhibits only a *re*-mission, the ague an *inter*-mission. I deny the truth of both propositions, at least so far as relates to the distinction attempted to be established between remission in the one case, and intermission in the other. The term intermission (cessation or suspension of the disease), in fact, applies correctly to neither. The animal economy does not return to its healthy condition during the interval between the paroxysms of an intermittent fever, as must be admitted by every observer who has watched its progress attentively, or who, like myself, has been the subject of an attack. The same holds good in gout. In both diseases, the interval between the paroxysms is marked by certain feelings of *malaise*, irritability, depression of vital power, and derangement of the secretions, as truly indicative of morbid disturbance, as the throbbing toe, the icy chill, or burning temples. Thus, then, we perceive that in regular gout, a disease to which few will be disposed to assign a *malarious* origin (my own identical words!) the law of periodicity applies no less closely than it does to ague."

"There is a homogeneity (unity), if the expression be permitted, in the laws of disease, of which we are *just now beginning* to enjoy the *first glimpses;* and although it would be too much to allege that fever and inflammation are but one and the same morbid action, greatly diversified, no doubt, through the influence of numerous concurrent circumstances, we nevertheless know that the theory of the day which rendered a special reason of the proximate cause of the *one*, was deemed to be equally illustrative and explanatory of the other. The phenomena of fever, as specially distinguished from inflammation, are, I am disposed to believe, *essentially one and the same;* the *simplest expression* of that morbid action being delineated, in the paroxysm of an ague, in the succession of its three stages —the hot, cold, and sweating; and assuming, under certain circumstances of climate, constitution, modes of living, &c., the various forms of typhus fever, plague, remittent fever, yellow fever, and all the subordinate varieties of fever denominated *essential* by the French school."

I could here quote numerous other passages, equally illustrative of Dr. Dundas's "new views" of the constitutional origin and febrile nature of the generality of so-called "local diseases," and of the value of "quinine" in their treatment; but I have only space for the following quotation from his preface. With this I shall conclude my extracts from Dr. Dundas's book:—

"The author is well aware that these opinions are in direct opposition to those held by the profession, and he has therefore clearly and briefly submitted the chief evidence on which, against his own personal convictions, he was first led to doubt, and finally to reject, *doctrines* sanctioned, as it were, by the greatest names in ancient and modern medicine. As to the rest, the author cares only for the truth."

In that case, I will ask "the author" a question or two. Did or did not Dr. Dundas, twelve months, at least, before he published his book on Brazil containing these "new views," read the "Fallacies of the Faculty?" and, having read it, did he or did he not return the volume to the gentleman who lent it to him, "with his compliments, and he was greatly pleased with its contents?" These "new views," according to Dr. Dundas, are the result of his own unassisted observations and reflections during "many years, and in many lands." Yet, when one and all of them present themselves to his astonished vision in the pages of a prior writer, so faint and feeble is Dr. Dundas's memory, that, forgetting he has ever before seen them, he rushes soon after into

print and all but verbatim copying my sentences, walks away with the sum and substance of a discovery which, if it has hitherto been a source of more gloom than gladness to myse'f, will not, I feel assured, be to the Liverpool physician a theme for any very lasting glory!

(To be continued.)

CORONER'S INQUESTS.

To the Editor of the East London Observer.

Sir,—However useful or ancient coroners' courts may be, their abuses are equally notorious; and notwithstanding all that can be said to the contrary, so long as the necessity of inquests depends on the extent of the fees, it will become the duty of the magistrates, who are the guardians of the purse-strings of the county, to regulate the supplies. "Money makes the mare to go;" and coroners are only human.

It cannot be denied that these inquests, which by-the-by must not be confounded with trial by jury, are often composed of characters who like a "boose" at a public house, and who duly appreciate the "coroner's" refreshment-fee; and as summoning officers are generally of a jovial turn, they know well who to call upon on these occasions. It is nothing to such persons that the feelings of a neighbour are outraged or his position blasted by the animus that is too often raised by an ordeal of this kind. Should however any wight be independent enough to question the propriety of an inquest, or the necessity of medical evidence, even when the cause of death can be clearly ascertained without it, his services would be dispensed with for ever afterwards.

At the same time I quite agree with you, that, as a rule all sudden and suspicious deaths should be investigated; but the law justly requires that there must be reasonable grounds for such suspicion before subjecting an individual to so repugnant an ordeal as I have myself lately witnessed, and which is now a subject of inquiry before the proper tribunal.

I venture to predict, if coroners had fixed stipends, that the number of inquests would sensibly diminish. It is all bosh, and a libel on the integrity of Englishmen, to infer that anything criminal would be tolerated or encouraged thereby.

Without implying that questionable or needless inquests can be coloured, it is worthy of remark, that the same two reporters have for years attended the coroner in this district (E).

John Stephens.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

YARROW.—(Achillea Millefolium.)

Description.—Yarrow is a perennial herb, grows from four to eighteen inches high; the leaves are minutely divided, similar to those of a carrot, but narrower and closer; the flowers grow in a tuft at the top of the stalk; the flower-leaves are small and white generally, though sometimes purplish.

Place.—Very common in fields, pastures, waysides, and lanes.

Time.—It flowers from July to September.

Qualities.—There is not a common plant anywhere that can be applied more beneficially in the early stages of disease. Yarrow-tea is excellent for a cold, rheumatism, and it expels worms; it is an excellent diaphoretic, it equalises the circulation, is mildly tonic, and acts with some power upon the kidneys. A strong decoction will be beneficially applied to old sores, scald-head, or any form of scorbutic eruption, and an ointment made with the fresh flowers and leaves, in conjunction with ground ivy and red raspberry-leaves, also fresh, united with hog's lard, is one of the best for scurvy or old sores. In fact, it is a most valuable herb.

HIPPOCRATES.

(Continued from page 22.)

In the writings of Hippocrates we find a general principle adopted, which he calls Nature. "Nature," says he, "is of itself sufficient to every animal. She performs everything that is necessary to them, without needing the least instruction from any one how to do it." Upon this footing, as if nature had been a principle endowed with knowledge, he gives her the title of *just;* and ascribes virtues or powers to

YARROW.

her, by means of which she performs all her operations in the bodies of animals; and distributes the blood, spirits, and heat through all parts of the body, which by these means receive life and sensation. And he adds, that it is this faculty which gives nourishment, preservation, and growth to all things. The manner in which nature acts, or commands her subservient powers to act, is by attracting what is good and agreeable to each species, and by retaining, preparing, and changing it; and on the other side in rejecting whatever is superfluous or hurtful, after she has separated it from the good. This is the foundation of the doctrine of depuration, concoction, and crisis in fevers, so much insisted upon by Hippocrates and most other physicians. He supposes also, that everything has an inclination to be joined to what agrees with it, and to remove from everything contrary to it; and likewise that there is an affinity between the several parts of the body, by which they mutually sympathise with each other. When he attempts to explain what *nature* is, he is obliged to resolve it into *heat*, which, he says, appears to have something immortal in it. As far as he attempts to explain the causes of disease, he refers much to the humours of the body, particularly to the blood and the bile. He treats also of the effects of sleep, watchings, exercise, and rest, and the benefit or mischief we may receive from them. Of all the causes of diseases, mentioned by Hippocrates, the most general are diet and air. On diet he composed several books, and in the choice of this he was exactly careful, as his practice turned almost wholly upon it. He also studied the air very much; he examined what winds blew ordinarily or extraordinarily; he considered the irregularity of the seasons, the rising and setting of stars, and the time of certain constellations; of the solstices, and of the equinoxes; those days, in his opinion, producing great alterations in certain diseases.

He does not, however, attempt to explain how, from these causes, the great variety of distempers arises. All that he says with regard to this is, that the different parts of the body produce a great variety of distempers. Some of these he accounts mortal, others dangerous, and the rest easily curable, according to the cause whence they spring, and the parts on which they fall. He also distinguishes diseases, from the time of their duration, into acute or short, and chronical or long; as well as by the particular places where they prevail, whether ordinary or extraordinary. The former, which are frequent and familiar to certain places, he calls endemic diseases; the latter, which ravage extraordinarily sometimes in one place, sometimes in another, and seize great numbers at certain times, he calls epidemic, that is, popular diseases; and of this kind the most terrible is the plague. He likewise mentions a third kind, which he calls sporadic or straggling diseases: these include all the different sorts of distempers which invade at any one season, which are sometimes of one sort and sometimes of another. He distinguishes between those diseases which are hereditary, or born with us, and those which are contracted afterwards; and between those of a kindly and those of a malignant nature: the former, he says, are easily cured, but the latter give the physicians a great deal of trouble, and are seldom overcome by all their care.

Hippocrates remarked four stages in distempers; viz., the beginning of the disease, its augmentation, its state or height, and its declination. In such diseases as terminate fatally, death comes in place of the declination. In the third stage, therefore, the change is most considerable, as it determines the fate of the sick person; and this is most commonly done by means of a crisis. By this word he understood any sudden change in sickness, whether for the better or for the worse, whether health or death succeed immediately. Hippocrates imagined diseases to be only a disturbance of the animal economy, with which nature was perpetually at variance, and using her utmost endeavours to expel the offending cause; by reducing to their natural state those humours whose discord occasions the disturbance of the whole body, whether in relation to their quantity, quality, mixture, motion, or any other way in which they become offensive. The principal means employed by nature for this end he calls concoction. By this

he understood the bringing the morbific matter in the humours to such a state as to be easily fitted for expulsion. The time required for concoction depends on the differences among distempers. In those which Hippocrates calls very acute, the digestion or crisis happens the fourth day; in those which are only acute, it happens on the seventh, eleventh, or fourteenth day; which last is the longest period generally allowed by him in distempers truly acute, though in some places he stretches it to the twentieth or twenty-first, nay, sometimes to the fortieth or sixtieth day. All diseases that exceed this last term he calls chronical: and while in those diseases that exceed fourteen days, he considers every fourth day as critical, or at least, remarkable, by which we may judge whether the crisis on the following fourth day will be favourable or not; so in those which run from twenty to forty, he reckons only the sevenths, and in those that exceed forty, he begins to reckon by twenty. Beyond the one hundred and twentieth he thinks that the number of days has no power over the crisis. They are then referred to the general changes of the seasons; some terminating about the equinoxes; others about the solstices; others about the rising or setting of the stars of certain constellations; others by months or years. Thus, certain diseases in children have their crisis in the seventh month after their birth, and others in their seventh, or even their fourteenth year.

But what has chiefly contributed to procure the vast respect paid to Hippocrates is, his industry in observing the most minute circumstances of diseases, and his exactness in describing everything that happened before and at the same time with them, and likewise what appeared to give ease, and what to increase the malady; which is called writing the history of a disease. Thus, he not only distinguished one disease from another by the signs which properly belong to each, but by comparing the same sort of distemper which happened to several persons, and the accidents which usually appeared before and after, he could often foretell a disease before it came, and afterwards give a right judgment of the event of it. By this way of prognosticating, he came to be exceedingly admired; and this may justly be said to be his masterpiece; for, as Celsus remarks, succeeding physicians, though they found out several new things, yet were obliged to Hippocrates for all that they knew of signs.

The first thing Hippocrates considered, when called to a patient, was his looks. It was a good sign to have a visage resembling that of a person in health, and the same with what he had before the disease. As it varied from this, so much the greater danger was apprehended. He thus describes the looks of a dying man: "When a patient has his nose sharp, his eyes sunk, his temples hollow, his ears cold and contracted, the skin of his forehead tense and dry, and the colour of his face tending to a pale green or lead-colour, one may give out for certain that death is very near; unless the strength of the patient has been exhausted all at once by long watchings, or by a looseness, or being a long time without eating." This observation has been confirmed by those of succeeding physicians, who have, from him, denominated it the Hippocratic face. The lips hanging relaxed and cold, he likwise considered as a confirmation of the foregoing prognostic. He also took his signs from the eyes. When a patient cannot bear the light; when he sheds tears involuntarily; when, sleeping, some part of the white of the eye is seen, unless he usually sleeps in that manner, or has a looseness; these signs prognosticate danger. The eyes deadened, as it were, with a mist spread over them, or their brightness lost, likewise presages death or great weakness. The eyes sparkling, fierce, and fixed, denote the patient to be delirious, or that he soon will be so. When the patient sees anything red, and like sparks of fire or lightning before his eyes, we may, he says, expect a hæmorrhagy; and this often happens before those crises which are to be attended by a loss of blood. The condition of the patient is also shown by his posture in bed. If he lies on one side, his body, neck, legs, and arms a little contracted, which is the posture of a man in health, it is a good sign: if he lies on his back, his arms stretched out, and his legs hanging down, it is a sign of great weakness; when he slides down towards the feet, it denotes

death. When a patient in a burning fever is continually feeling about with his hands and fingers, and moves them up before his face and eyes, as if he were going to take away something before them; or on his bed covering, as if he were picking or searching for little straws, or drawing out little flocks of wool; all this Hippocrates considers as a sign that the patient is delirious, and that he will die. Among the other signs of delirium he adds this: when a patient who naturally speaks little begins to talk more than he used to do, or when one that talks much becomes silent, this change is to be reckoned a sort of delirium or a sign that the patient will soon fall into one. The frequent trembling or starting of the tendons of the wrist presage likewise a delirium. Hippocrates was much more afraid of those deliriums that run upon mournful subjects, than such as are accompanied with mirth. He depended much on respiration in making his prognostics; and therefore carefully describes the different manner of a patient's breathing. When a patient breathes fast, and is oppressed, it is a sign that he is in pain, and that the parts above the diaphragm are inflamed. Breathing long, or when the patient is a great while in taking his breath, shows him to be delirious, but easy and natural respiration is always a good sign. Continual watchings, in acute diseases, are signs of present pain or approaching delirium.

Hippocrates also drew signs from all kinds of excretions, and inquired into the state of the pulse, or the beating of the arteries. The most ancient physicians, however, and even Hippocrates himself, for a long time, by this word understood the violent pulsation that is felt in an inflamed part, without putting the fingers to it. It is observed by Galen, and other physicians, that Hippocrates touches on the subject of the pulse more slightly than any other on which he treats. But that he understood something even on this subject, is plain from several passages in his writings; as when he observes, that in acute fevers the pulse is very quick and very great; when he mentions trembling pulses, and those that beat slowly; when he observes, that in some diseases incident to women, when the pulse strikes the finger faintly, and in a languishing manner, it is a sign of approaching death. He remarks also, in the *Coacæ Prænotiones*, that he whose vein, that is to say, whose artery of the elbow, beats, is just going to run mad, or else that the person is at that time very much under the influence of anger. From this account of Hippocrates, it appears, that he was not so much taken up with reasoning on the phenomena of diseases as with reporting them. He was content to observe these phenomena accurately, to distinguish diseases by them, and judged of the event by comparing them exactly together. For his skill in prognostics, he was indeed very remarkable, insomuch that he and his pupils were considered as prophets.

One of the principal maxims of Hippocrates, for the preservation of health, was, that we ought not to overcharge ourselves with too much eating, or neglect exercise and labour. Another was, that we ought not to accustom ourselves to too nice and exact a method of living; because those who have once begun to act by this rule, if they vary in the least from it, find themselves very ill; which does not happen to those who take more liberty, and live somewhat more irregularly. He however did not neglect to inquire into what people in health used for food in his time, for he takes great pains to tell the difference between the flesh of a dog, a fox, a horse, and an ass; which he would not have done if they had not been then used for food. He also speaks of all other kinds of provision now in use; as salads, milk, whey, cheese, flesh of birds and beasts, fish, eggs, pulse and grain, with the different sorts of bread made of it. He also speaks often of a sort of broth, made of barley or some other grain, which they steeped and boiled in water. With regard to drink, he is at great pains to distinguish good waters from bad. The best ought to be clear, light, without smell or taste, and taken out of the fountains that turn towards the east. The salt waters, hard waters, and those of fenny ground, are the worst; he condemns also those that come from melted snow; yet he advises persons in health to drink of the first water that comes in their way. He speaks also of alum waters, and hot waters. He advises to mix wine with an

equal quantity of water, as the wine will expel what is hurtful, and the water will temper the acrimony of the humours. For persons in health, as well as for such as are sick, Hippocrates advises exercise. The books, however, which treat on this subject, M. Le Clerc supposes to have been written by Herodicus, who first introduced gymnastic exercise into medicine, and who is said by Hippocrates to have killed several people by forcing them to walk while they were afflicted with fevers and other inflammatory disorders. These books contain directions for the times proper for walking; the condition we ought to be in before it; when to walk slowly, when to run, &c.; and all this with respect to different ages and temperaments, and with design to dissipate the humours, &c. Wrestling, though a violent exercise, is numbered with the rest. Mention is also made of a play of the hands and fingers, which was thought good for health, called chironomia; and of another diversion performed round a sort of ball hung up, which they called corycus, and which they struck forward with both hands.

From the above account of the opinion of Hippocrates, it may be concluded, that he would generally be contented with observing what nature is able to accomplish without the aid of the physician. That this was really the case, appears from his books entitled, *Of Epidemical Distempers;* which are, as it were, journals of his practice; for there he often does nothing more than describe the symptoms of a distemper, and what had happened to the patient day after day, to his death or recovery, without mentioning any kind of remedy. Sometimes, however, he did use remedies; but these were very simple and few, as will appear from the following abridgment of the principal maxims on which his practice was founded. He asserted, 1st, That contraries are the remedies for each other. This maxim he explains by an aphorism, that evacuations cure those distempers which come from repletion, and repletion, those that are caused by evacuation. So heat is destroyed by cold, and cold by heat, &c. 2. That physic is an addition of what is wanting and a retrenchment of what is superfluous: that there are some humours, which in particular cases ought to be evacuated or dried up; and others, which ought to be restored to the body, or reproduced. But he gives this general caution, to be careful how you fill up, or evacuate, all at once, or too quickly, or too much; and that it is equally dangerous to heat or cool again on a sudden. 3. That we ought sometimes to open the passages by which the humours are voided naturally, when they are closed, and to straiten the passages that are relaxed, when the juices pass in too great quantity. 4. That we ought sometimes to smooth, and sometimes to make rough; sometimes to harden, and sometimes to soften; sometimes to make more fine or supple; sometimes to thicken; sometimes to rouse up, and at other times to stupify or take away the sense; all in relation to the solid parts of the body, or to the humours. 5. That we ought to have regard to the course the humours take, whence they come, and whither they go; and to carry off that which is necessary to be carried off; and not let the humours once evacuated enter into the vessels again. Hippocrates says, that when we do anything according to reason, though the success be not answerable, we ought not too hastily to alter the manner of acting. But as this maxim might sometimes lead to mistakes, he adds, "We ought to mind with a great deal of attention what gives ease, and what creates pain; what is easily supported, and what cannot be endured." These are the principal maxims of Hippocrates' practice, founded on the supposition that nature cures diseases.

MEDICAL EDUCATION.

(Continued from page 33.)

THE internal history of the two London Colleges, considered with reference to their exclusive privileges, is, *mutatis mutandis*, the internal history of all other medical bodies possessing like privileges in the United Kingdom. Indeed, so truly typical are they, so invariably have like causes produced like results, that having sketched the history of the operation and effects of those causes in the largest spheres of their activity, it would be useless to narrate the separate histories of the other medical corporations for the sake of establishing the principle we contend for, viz., that in exact proportion to

the extent of the exclusive privileges conferred on any corporate body, or of the violation of the rights of individuals, does the commonwealth suffer.

Were there no State interference with the profession, its members would group themselves into societies or voluntary corporations, according to their individual studies and affinities. The force of character and of scientific qualifications would speedily determine the relative position and authority of each in the professional body. The Medical Society and the Medico-Chirurgical Society of London, highly important and useful institutions, constituted themselves, and are independent of the State. It is true the latter possess a charter, but that charter only suspends in favour of this society those unjust acts which interfere with the indefeasible right of private contract, and which are known as the Partnership Laws.

The numerous scientific societies of the United Kingdom, with perhaps one or two exceptions, are independent of the State, and are evidence of the tendency to spontaneous and effective organisation. But the best proof of the readiness of the profession to organise itself if let alone is given in the voluntary formation of three large bodies, calling themselves respectively the "Associate Surgeons of England," the "National Institute of Medicine, Surgery, and Midwifery," and the "British Medical Association." The first, consisting of 1200 members, formed itself in 1845 to oppose Sir James Graham's Medical Bill of that date, and to effect a reform of the constitution of the College of Surgeons. The second, which arose in 1844, under the name, in the first instance, of an "Association of General Practitioners," regarding a reform of that College as hopeless, aimed primarily to defeat Sir James Graham's measure, and then to collect into one fold all the practitioners having various qualifications, each of whom was to be recognised as of equal legal status, and as possessing equal privileges, and finally to obtain legal power to confer a diploma on candidates for membership which should be a testimonial of their competence in the three departments of the profession. In March, 1845, 1000 members of this body met in Hanover Square Rooms, and the entire society consisted of between 4000 and 5000 members, governed by a president, three vice-presidents, and a council. The third, the British Medical Association, still exists. It consists of 2000 members, is governed by a representative council, and has a journal of its own, in which it records and publishes its proceedings and discusses the various topics of professional interest. There is no ground for fear, therefore, that if the State were to leave the profession to itself it would dissolve into anarchy. In fact, the present medical bodies would constitute the nuclei of regenerated institutions, while the confusion of claims and privileges, and the interminable conflicts which constitute the chief part of the history of these bodies, and which, as we have shown, are due to the relation they have sustained to the State, would give place to simplicity and peaceful action. For, whereas, now the authorities of each corporation regard their separate monopolies as means for their own aggrandisement, and oppose therefore any trenching on their privileges by their rivals, these monopolies, if unsupported by the State, would cease to exist; and the chief objects of professional contention being abolished, friendly feeling would be generated in place of the enmity which now too extensively prevails, an effective association for the promotion of medical and surgical science would be substituted for the old corporations which were long mainly intent on concentrating in the hands of their several corporators their emoluments and honours.

(To be continued.)

VARIETIES.

Milk.—Cows' milk may be said, in round numbers, to contain 4 per cent. of butter, 7 per cent. of casein, and 3 per cent of sugar. Asses' milk appears to contain less than a third of the proportion of butter, less than one-fourth the proportion of casein, and more than double the quantity of sugar, compared with the proportion of these ingredients in cows' milk. It is easily explained from this that asses' milk is more easily digested, and less nourishing, than cows' milk. The usefulness of asses' milk in the case of many invalids, so long known and believed, and which has of late years been comparatively little attended to, is demonstrated satisfactorily by the results of analysis, and deserves to be insisted on.

LEARNED BOYS.—I have seen silly parents trying to get their children to say that they liked school-time better than holiday-time; that they liked work better than play. I have seen, with joy, manly little fellows repudiating the odious and unnatural sentiment; and declaring manfully that they preferred cricket to Ovid. And if any boy ever tells you that he would rather learn his lessons than go out to the play-ground, beware of that boy. Either his health is drooping, and his mind becoming prematurely and unnaturally developed, or he is a little humbug. He is an impostor. He is seeking to obtain credit under false pretences.—*Fraser's Magazine.*

NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague Place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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NOTICES TO CORRESPONDENTS.

A full report will be given in our next number, of the Botanic Soirée held at Sheffield, on Tuesday, the 2nd inst.

POST-OFFICE ORDERS and all communications for goods, &c. to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

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BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 21.

PERIOD OF MATURITY.

The cessation of growth, and the completion of the developmental processes, which indicate the attainment of *manhood*, are accompanied by a marked increase in the general vigour of the organism, and by a special augmentation in the power of *endurance* in the exercise of the animal faculties. With the exception of those parts of the fabric whose utility was confined to the earlier periods of its development, we find every organ now presenting its greatest capacity for sustained activity; and thus it is from the characters which each presents at this period, that we base our ideas of its *typical* perfection of structure and composition. All the previous changes which the organism has undergone, both as a whole and in its separate parts, concur to the attainment of this perfection, as we have especially seen in regard to the evolution of the solid framework of the body; and every subsequent change involves a deterioration from it. There is now no longer any capacity for the production of new organs, and comparatively little for the augmentation of those already existing. The increase of the uterine and mammary structures during the period of gestation, being the most important examples of formative power, and these presenting themselves in the sex in which there is least of nervo-muscular activity, and of general vigour, we should infer, then, that the germinal capacity is now on the decline; and this further appears from the diminished energy and completeness, with which the reparatory processes are performed, as compared with the mood in which they are executed during the period of growth.

There is, consequently, a less demand for alimentary material than during the previous periods, and the dependence of life upon a constant supply of aliment is far less close. Moreover, the ordinary rate of waste, or degeneration of tissue, is now much less rapid than during the period of growth; for we have seen that decay and removal, in the latter case, are among the very conditions of increase; whilst in the former they proceed, for the most part, only from the expenditure of the vital powers of the tissues, consequent upon their functional activity. Hence it is upon the degree in which the *animal* powers are exercised, that the demand for food chiefly depends in the adult; the sole purpose of the organic or vegetative operations being to keep the apparatus of animal life, now fully developed, in working order. The relative activity of the different parts of this apparatus is now somewhat modified. The *observing faculties* no longer possess the same pre-eminence, the *emotional sensibility* is less readily excited, but the *intellectual powers* now act in the moods which have become habitual to them with a sustained vigour and completeness they never previously possessed. And so whilst the muscles are not so easily excited to contraction, and new combinations of movement are acquired with far more difficulty than during the period of growth and development, the force which they can generate by their contraction is augmented, and this force can be kept up for a much

longer time in adults than in younger subjects.

The duration of the period over which this maintenance may be protracted, without any sensible deterioration, depends in a great degree upon the due observance of all the conditions of health. If the various mental and bodily faculties are duly exercised without being overtasked; if an amount of *sleep* adequate to their periodic renovation be regularly taken; if a sufficient but not excessive quantity of wholesome food be ingested at appropriate intervals; if the functions by which the blood is prepared, and those by which it is kept in purity be duly performed; if all such noxious agents as foul air and alcoholic liquors be kept at a distance, and there be no constitutional predisposition to disease on the one hand, nor any exposure to extraneous morbific causes on the other, it may be fairly anticipated that the bodily and mental vigour may be sustained with little deterioration during a long succession of years.

The circumstances that most tend to premature decline are, on the one hand, excessive exertion either of the mental faculties or of the generative power; or, on the other, undue indulgence in food, or in stimulating drinks, or in any practice that tends to disorder the organic functions, especially by exciting them to undue activity; and this tendency will, of course, be more decided, the greater is the amount and the larger the combination of those departures from the laws of health which give rise to it.

(To be continued.)

MEDICO-BOTANIC SOIREE AT SHEFFIELD.

The eighth annual soirée of the friends of the Botanic System of medicine was held in the Cutlers' Hall on Tuesday evening, November 2nd. The attendance was very large; so large, indeed, that the principal room was not large enough for the accommodation of the visitors at tea at one sitting. Mr. Thomas Garlick, of Wolverhampton, was voted to the chair. In order to raise funds towards the erection of a botanic hospital, a bazaar was got up, and the call for articles for sale was most liberally responded to, and during the day a very fair sale was effected. About five hundred persons sat down to tea. After tea,

The Chairman said he was pleased to see so numerously attended a meeting. Although Dr. Coffin had not yet arrived, he was informed by some friends from London that there was no doubt ultimately of his coming.

The Chairman rose again and said there was a resolution or two to be brought before the meeting. Since he had been before them on a former occasion, his views of Medical Botany in removing diseases of any kind had considerably increased. He thought that Medical Botany was still in its infancy, and when he looked round and saw so many young friends, that circumstance only the further confirmed his idea on that point. He assured his friends that in the mining district from whence he came it was doing immense good. It had made rapid progress in that locality, and he was fully convinced of its advantages to the public. One great reason of the progress of Medical Botany in that district was the success which attended their efforts over the cholera some nine years ago. Hundreds of families in that mining neighbourhood kept in their houses Dr. Coffin's anti-cholera powders, and by so doing a great number of lives had been saved. If Dr. Coffin had done nothing else but introduce that one valuable botanical remedy, the cholera specific, that was quite sufficient to bring so numerous a meeting together in his favour. He had himself been exceedingly successful in cholera cases, only having lost two in his time, and those two cases were lost through the previous intemperate habits of the sufferers.

Mr. Joseph Scholey said that he had been requested to propose a resolution. He had always been an advocate for reform under all circumstances and in all places. He loved the principle of reform, because it seemed to him to be a go-a-head principle. He loved to see men and women prepare to reform themselves, and he wished to see households, communities and nations reform. He had no doubt they should be much better off if they could reform their medical system as at present carried out. He did not know

everything about the subject, nor did he want to do so. If a doctor came to his house he always said, "There's the death-watch." He did not want to die; if he did he would send for a doctor oftener than he did. He believed that all monopolies should cease; at all events they should cease as soon as the people were prepared to receive the change. The present meeting showed that there was a strong desire for a change in the town of Sheffield. For his part, he believed that of two evils it was best to choose the least, and in order to do that he should certainly choose Medical Botany. The other system was a system which gave legal permission to persons to learn to cut off legs and arms, instead of learning to cure them. The law did not allow the Medical Botanist to do these things, and perhaps it was as well that it did not, because it must tend to take away the feeling of responsibility that at present existed among them. He did not think it well that they should learn to cut off legs and arms, and heads, but he did think that it was well that attempts to cure ought to be made. The Medical Botanist sought to cure, and never attempted amputation. He understood what the term science meant, but when they used the term "medical science," he did not know what was meant. If he were inclined to be killed at all, he should like to choose his own way, and he had no desire to have any death forced upon him that seemed rather unpleasant. He did not like laws that compelled people to go to a certain class of people with their money to be relieved from their illness. He did not like the law which compelled him to send his children to be vaccinated by a certain class of people who might not feel as much interest or care as they ought. He would sooner go to the shop of Mr. Naden—Mr. Councillor Naden. He concluded by proposing the following resolution, with which he heartily agreed:—"That this meeting is of opinion that class legislation is a barrier to the progress of medical science, and pledges itself to use every legitimate means to overthrow the present system of medical monopoly."

Mr. Thomas Woodcock seconded the resolution. He was glad to see so many friends of the medico-botanic system present, and said that that was the only system applied to human nature until the year 1494. The word "quack" had been by the medical profession applied to the practitioners of the medico-botanic system; but he could tell them that the word originated with the mineral practitioners. In the year 1494, the medico-botanic system was called the general system in the same way as the mineral practice is now called, the legitimate. A clever individual, of the name of Paracelsus, arose in the year 1494, and introduced the use of mercury and calomel, which was called by the Germans "quacksalver," and that was how the word arose which is now used to ridicule the medico-botanic system. He was pleased to see the success which was attending the medico-botanic system, particularly in America, where colleges had been formed, and where students were sent, not to learn the mineral or "quack" practice, but the medico-botanic practice. The system had made greater progress in America than in England, but that was mainly attributable to the endeavours which had been made to instil into the minds of the public that the system was one of "quackery." He referred to the government introduction of a Medical Bill as a further means of the hollowness of the profession; and he advised the friends of the medico-botanic system to adhere stoutly to the system. He was engaged in that practice himself, and he could tell them that no medical bill, however stringent, would deter him from practising that system. He hoped that the friends of the practice would be determined in their efforts, and not listen to the calumnies which had been heaped upon the system by the mineral professors. He thought the medico-botanic system had recently made rapid advances. It had yesterday placed one of their practitioners in the proud position of town councillor; and he was sure that that gentleman would defend their interests in a fair, honest, and manly manner.

The Rev. William Taylor, of London, said that about two years ago, he had the pleasure of addressing a similar meeting in that hall, and he did not anticipate that he should ever be invited to come

again. Whenever a man was called to use his influenee in support of anything which he might consider right, it was his duty to obey the eall. He had been called upon to propose the following resolution :—"That this meeting is of opinion that the botanie system, as propounded by Dr. COFFIN, is simple in its application and efficaeious in its results, and is worthy of the confidence of the people." If there was anybody in England who ought to know anything of the medico-botanic system, it was himself. He had been under the care and attention of medical men, and had suffered much before he became acquainted with Dr. COFFIN and his system. Whilst suffering he was desired to go and hear D. COFFIN, who was giving a course of lectures. He did so, though he had not previously taken any notiee of that gentleman or his system. The consequence of his attendance was that he became eonvineed that a good deal that Dr. COFFIN had said was true, and what he did not know to be true he eould make inquiries about. He had been attended by medieal men. He had been bled, and had undergone different modes of treatment under the medical men, but he had not been benefited. He had had nine ehildren, all of whom had been attended by medieal men, but they had been unable to save their lives. He thought that where disease existed it was desirable to know how to remove or mitigate it. To his mind the medico-botanic system was the best adapted to cure the illness that men were subject to. Where was the man who had laboured so hard, toiled so much, and had been so successful as Dr. COFFIN? He had travelled about in various parts for the purpose of spreading his knowledge among the people on the subjeet, and had been the means of doing immense good. He was glad to learn that the profits of that meeting were to be devoted towards the erection of an hospital. The objects of the institution were—first, to help the suffering; and, secondly, to instruct some and fit them for practice, and where others might see the various forms of disease that were collected together, and the treatment of those diseases, and thus be better qualified to practise afterwards. The speaker eoneluded by desiring that persons should place eonfidence in the system of Dr. COFFIN, and not be led away by ignoranee and prejudiee; and by a few appropriate observavations on the late melaneholy catastrophe at Bradford, in whieh about seventy persons have been poisoned, making it praetieal by the assertion that though poison had been obtained from a chemist's shop, any one might go to the shop of Mr. Councillor Naden, and if they were served even by the shop-boy or the domestic servant, they might rely upon it that they would not be served with poison.

Mr. Couneillor Naden said that it was now twelve years sinee Dr. COFFIN first propounded the botanical system in Sheffield, and with what success he left the reply to the erowded and respectable audience before him. The sueeess of the botanical system over the mineral was attributable to three causes; namely, first, that the latter system did not meet the requirements of the age; seeondly, the inability of the praetitioners; and thirdly, the suecess of the Medical Botanist in cases where the mineral professor had failed. Twelve years of practical experienee had taught them that the botanieal system contained every element requisite for the preservation of health. He had had one hundred and twenty cases of smallpox under his charge, and out of that number had only lost four. He asked, Was there a single medical man, either in Sheffield, or elsewhere, eould eome and say that? A great portion of those cases also were amongst persons who had not been vaecinated. There were failures, however, in everything. The Atlantic telegraph had for a time proved a failure, but he hoped eventually that it would bind the two eountries of England and America together like father and son. He referred his audience to the trials the botanic system had had to endure, remarking that when constitutions had been broken and shattered by the attempts of the mineral professors, they were transferred to the Medical Botanist to reinstate. He described many lamentable eases of disease which he had attended, and which had been cured by simple remedies that God had plaeed in

the fields. Although he was not addressing a number of medical students, like Dr. Charles Smith was a few weeks ago, he hoped they would allow him to make a few remarks upon what that medical gentleman had said. Dr. Smith told the students that if such men as he were classed with Sir Benjamin Brodie and others, "that the science of medicine would cease to exist." He did not, however, tell them what Sir B. Brodie had said with reference to thirty years of his medical life. No! But he could. Sir Benjamin had said that thirty years of his life had been spent in the entire torture of his patients. Neither did Dr. Smith tell his medical students what Dr. Goodie had said; viz., that the students must kill themselves into practice. The plan of operation pursued by the botanist was to overcome disease, and in that he confidently asserted they had succeeded. He had been classed with Sir Everard Home, who, after collecting the writings of Dr. John Hunter and applying them to his own science, burnt them. He did not wish to be classed with such a medical man as that, but he said, Away with such men! and let them have the botanic system in their places. He had received a letter from Mr. Caldwell, of Birmingham, who stated that since he had been engaged in the botanic system he had not required so many registrar's certificates. The Rev. M. A. Moon, of Stannington, sent word that he wished to give every assistance to the botanical system. Mr. Nadin concluded by seconding the resolution, which was carried unanimously.

Mr. H. Titterton said he had, fortunately, a very easy task to perform. It required very little study to say a word or two in reference to the resolution he had to propose, which was, "Resolved, that the best thanks of this meeting be given to Dr. COFFIN for his honest and manly advocacy of the cause of medical reform." The reform which tended to enhance human happiness called forth their gratification; and that which had been advocated for the last twenty years by Dr. COFFIN had been more in that direction than any other system that had ever been put in practice. The system which he advocated was simple in its effects, but successful and pleasing in its results. Dr. COFFIN had advocated the system under very adverse circumstances; he had braved the scorn, and dared the law to put its worst power into execution in opposing the legal system, and in endeavouring to bring about a system which would save life, lessen human misery, and increase human happiness; and for that he deserved their most hearty thanks.

Mr. W. Ford, of Derby, seconded the resolution in a humorous speech, and on being put it was carried unanimously.

Dr. COFFIN, on rising to reply, was received with loud cheers. He said that Mr. Councillor Naden made a remark a few minutes ago, that he was not speaking to medical students; but he differed with that. He was speaking to medical students, and, what was better, he was speaking to mothers and those who had the charge of families, and those who had cured them. If those were not medical students, who were? He felt grateful that he had been the humble instrument to introduce a practice into Sheffield which by being carried out had done good to many. He always felt grateful when he thought of Sheffield, because of the way in which they appreciated him. Though he had suffered calumny and privation—for he had been very poor—still he was glad that by much suffering he had been the means of doing good. A law had been passed lately which he could liken to nothing but an iron bedstead—a law making medical practitioners all of one length. But even the law made them no better, but a little worse; and now they were quarrelling among themselves. The Apothecaries' Company had had all the power before, but now they had none. By the law, surgeons had had a little more power given to them, and the men who had M.D., M.R.C.S, and L.A.C. were to have their titles amalgamated. All the Medical Botanist had to do was to stand looking on, and they would see it all tumble down. After some remarks in reference to Dr. Smith, and expressing his sorrow that he was not present, he referred to the medico-botanic system. How was it possible that that which would destroy life could be tortured into an administration of life? The medical

botanist sought to assist nature in her course. They took no poison to kill diseases, which was said to be another poison, for to do that would be like setting fire to one end of a building in order to put out a fire at the other end of the building. He had known the effects of the system of medical gentlemen, for by them he had been reduced to the last stages of existence. But at last an old wild Indian woman came into the house, and said she would cure him for a gallon of cider. He took what the woman gave him—a simple mixture which she had gathered from the woods—and soon got well, and from that time he turned his attention to the excellent system which she had adopted. Thomas Duncombe, Esq., M.P., had sent his respects to the people at Sheffield. He had been the instrument of saving that gentleman's life after it had been broken down by the poisons that had been administered to him by medical gentlemen. As to what Dr. Smith had said at the opening of this session at the medical school in Sheffield, he would say that he should be very glad to meet him in that hall, in order to discuss the two systems. The system of authorised medical practitioners was downright humbug, quackery, and imposture. The gentlemen who followed that system attended people, and continued to do so, even though they saw that their patients were getting gradually worse, and at length died under their hands. Even after that had taken place, they had the impudence to ask for their fee. Before long, those who practised Medical Botany hoped to have an hospital and a medical board of scientific men. Dr. COFFIN concluded by expressing his thanks for the vote which had been passed.

The proceedings terminated about half-past ten o'clock with votes of thanks to the vocalists and to the chairman.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

MEDICAL EDUCATION.

(Continued from page 47.)

THE problem of medical reform would have been completely solved in 1845 by the large association of general practitioners, afterwards called the "National Institute of Medicine, Surgery, and Midwifery," if it had but freed itself of the general superstition regarding the necessity of securing the aid of the State in the form of a charter or Act of Parliament. This institute proposed that such of its members as should pursue their studies after its incorporation, should be admitted only after giving evidence to examiners of their fitness to practise as physicians, surgeons or accoucheurs, and thus would have abolished the old and absurd system which involves the necessity that a candidate should be examined by two or three different bodies before he is competent to act as a "general practitioner." It proposed to give its members a voice in its constitution and government, and to take care that its standard of professional education should be as high as possible, consistently with providing a sufficient number of medical men to sup-

ply the wants of the community. The one thing wanting to have given efficiency and permanency to the "National Institute" was a belief in its own self-sufficingness. Had it had this, it would also have had the courage to ignore the State, to exercise its own inherent power of judging of the fitness of candidates for admission into its body, to admit them accordingly, to give them a certificate of their admission, which, in the estimation of the public, would be an adequate testimonial of professional qualification, and to honour them by the title learned, or teacher, in the shape of the Latin word doctor. The State is powerless to determine whether a man be learned, unless by a commission of learned men; what need, then, is there, when a body of learned men has pronounced a favourable judgment concerning the qualification of any given person, that they should abstain from styling that person learned until the State has authorised them to do so? It can neither supervise their examination nor correct their judgment, and it is equally powerless to add to or take from the essential qualifications of the person in question.

We do not mean to say that if the "National Institute" had bravely ignored the State, and had proceeded to organise itself as a permanent body, it would have completely pacified the profession—embracing all the physicians and surgeons, as well as general practitioners, within its fold. Of the whole number, five thousand was, however, a goodly proportion to begin with; but if the College of Surgeons were not entrenched behind its charters, and thus enabled to resist all the efforts of its members to reconstitute it, the reform movement of the profession would have originated within the college itself, and would, therefore, have united the great majority of the medical men of England. There would be no sudden or violent change at any period, because a body whose normal development was not impeded or interfered with by the State would assuredly mould and remould its constitution and laws conformably to its growing ideas. And how much more rapid would be its development, how much more beneficent its agency, if it were thus absolutely free! As each member would then participate in the result of every improvement, and would feel that any idea or suggestion, contributed for the good of the whole body, would receive attention and become effective in proportion to its inherent force and merit, the welfare of the college would be cared for and thought for by a constituency of thousands, instead of being confided to a few interested men who have passed the most vigorous period of life. It is often objected that a constituency spread over the country, as are the members of the College of Surgeons, would find it impracticable to take any part, at once active and useful, in the government of that College. The promptness with which the members of the "National Institute" enrolled themselves, expressed their opinions by means of "schedules" (voting papers) sent through the post, and attended metropolitan and provincial meetings, effectually disposes, we believe, of this objection. But though very far from proposing, as Dr. Laycock did in 1848, that faculties of medicine and surgery should be established *by law* in various parts of the country, the presidents and officials of these local bodies electing the members of the supreme medical council, we are of opinion that if the spontaneous action of the profession were not paralysed by Government interference, it would naturally form itself into a number of local bodies, whose centres of organisation would be the large towns of their respective districts. Indeed, many such bodies already exist. But if Royal charters or Acts of Parliament did not deprive the profession of the power of self-government, such bodies would be far more numerous, more effectively organised, more powerful, and more important—a spontaneous federation would be almost sure to follow, and such federal union, representative of all the lesser unions, would probably constitute the most perfect machinery possible for the government of the whole medical republic, and would, in all its proceedings, be giving practical effect to the opinions and wishes of that republic. The gain to the profession of a government at once self-acting and just, would be immense, but it would be small when compared with

the larger gain to medical science, which would accrue from the organisation we are now contemplating. If all the local bodies which exist, or which would be called into existence, were affiliated, not only with each other, but with a metropolitan centre, where they were systematically but voluntarily represented, and where experiments, researches, and discoveries could be described and discussed, a stimulus to scientific activity, of unprecedented energy and persistence, tending to enlarge medical knowledge and to perfect medical practice, would be originated; while by means of such an organisation the moral influence, emanating from the noblest members of the medical body, would not only be diffused and directly brought to bear upon any one guilty of malpractices, of whatever kind, but would tend to raise the profession, as a whole, to a position, far higher than that which it now holds.

The members of the College of Surgeons of England form so much the larger part of the whole medical body of the United Kingdom, that we are perhaps justified numerically, in speaking of the reform of that College as being substantially *the* medical reform for which the profession has been struggling so many years. The education which is ensured by the conjoint examination of this College and the Society of Apothecaries, and which would have been conducted solely by the College of Surgeons if it had been subject to the control of its members, would doubtless suffice to meet the wants of the great mass of the community. It is true the science of medicine is so vast, and spreads its roots so widely and deeply into various sciences, each of which exceeds the comprehension of any single individual, that the tendency in men to restrict themselves to special fields of investigation and practice, is both inevitable and beneficent. Thus it is that we have surgeons who distinguish themselves exclusively as orthopedists, oculists, or aurists; and physicians who devote themselves mainly to the disease of some special viscus, and the complications thence arising. Affections of the brain, of the lungs and heart, and especially of the kidneys, claim many distinguished and almost exclusive devotees, and most of the eminent accoucheurs confine themselves within their own domain. But though these specialties may form centres of interest around which men of special tendencies may severally group themselves, they cannot serve as landmarks by which the domains of medicine may be divided into a number of departments, each to be denoted by a special diploma. Whatever may be the department to which any member of the profession may ultimately devote himself, we are convinced that a general education is essential to qualify him to pursue even his specialty with advantage. The division of the profession into physicians, surgeons, and apothecaries, we cannot but regard, therefore, as inimical to the progress of medical science and the public welfare; and we are confirmed in this opinion by the 5000 members of the "National Institute," who desired that the proposed diploma of that body should be a testimonial of competency to practise in each department of the profession. By whatever title men so educated may be designated, they will be the real physicians of the community. Such a general education would have been secured by the profession for itself long ago if the Government had not supported the exclusive system adopted by the several Colleges of Physicians and Surgeons, in order to gratify the spirit of caste, by keeping their respective departments "respectable and distinct." No reflecting person can fail to see that if all State support and control were withdrawn from the profession, its organisation would be far more simple and natural than it is now: the College of Surgeons and the Apothecaries' Company of London would either spontaneously coalesce, or, by dissolving, give place to an institution which would combine their separate attributes; the College of Surgeons and the Apothecaries' Company of Ireland would go through the same process; in Scotland the union is already effected; and generally each college or university would conform its educational requirements no longer to the restrictive provisions of ancient charters, or modern ones drawn up in in the same spirit, but to the dictates of science and common sense.

We are far, however, from thinking that when the Government has ceased to

interfere in the affairs of the profession, one uniform grade of education only, and but one class of diplomas denoting it, will satisfy the needs either of the profession or of the public. The love of distinction, the desire for pre-eminence, the spirit of caste, is innate in man, and when trusted implicitly to accomplish its own purposes, its effects are beneficial; only when fostered by protective enactments is this impulse injurious; left to itself, it will powerfully reinforce all the other motives which induce men to arrange themselves in classes, according to the affinities of character, culture, interests, and pursuits. If all the members of the profession were suddenly reduced to one denomination, the most studious and scientific would undoubtedly associate themselves immediately into a distinct society. This society, proud of its superiority, and jealous of any proceeding capable of affecting its respectability, would extend its fellowship on conditions which would ensure that each new member should be at least equal in repute or attainments to the old ones; and thus it would come to pass that evidence of admission to this society would virtually be the best testimonial obtainable of medical knowledge or skill. But assuming the difference between the general and professional education of this society and that of the great medical body to be such that few of the latter could qualify themselves to gain admission into the former, the spirit of caste or the tendency to differentiation would still operate, and express itself in the formation of a third society, occupying a position midway between the other two; and any disposition to grant admission to either of those societies, on conditions other than real merit, would be promptly checked, under a system of perfect freedom, by the threatened or actual formation of rival societies, in which justice should preside. Both ambition and the desire of professional success would prompt many to strive for admission into these higher societies, and thus the spirit of caste, untrammelled and unprotected, would prove one of the most powerful agents in exalting the character of the profession, and in raising the standard of medical education; whereas, up to the present time, owing to the co-operation of the State, its working in the profession has been fruitful only of abuses of the most baneful sort, as attested by the history already given of the two medical corporations of London, and especially of the creation and bestowal of their rank of fellowship.

(To be continued.)

FACTS FOR FAMILIES.

From the "Destructive Art of Healing."

(Continued from page 42.)

THAT a great revolution has taken place of late years in medical practice and opinion is undeniable. To what is this revolution owing? To the "more enlarged experience" of medical men themselves? To "the malaria from the wood pavement?" To "tea and potatoes?" To "the cholera?" Or—to the Chrono-thermal discovery, thus unblushingly plagiarised by doctors of all ranks and conditions, from the highest to the humblest? Denied and decried in the first instance, the influence of the new system on the minds of the medical men of this country has already produced the most important results. Homœopathists and allopathists alike surreptitiously profit by it in practice; and not the least is it imitated by some who still continue to deride it! Few, however, even among these would appear to have the requisite talent—it may be the requisite honesty—to carry out the Chrono-thermal principle to its legitimate extent. Whether from ignorance of the proper method of cure, or for the more lucrative purpose of procrastination—the medical people generally seem to have adopted a kind of compromise between some of the least destructive measures of the old practice and some of the more prominent features of my own doctrine. Even this spurious Chrono-thermalism is a mighty improvement on the practice of the past! General bloodletting, at least, is now all but discontinued; but much bad treatment still remains. Starvation and purgation are still more or less prescribed in the first instance by the greater number of practitioners; who do not adopt till a later period of the case what I invariably begin with—quinine, iron, and other remedies, that have a favourable influence in fever,

without in any way lessening the material of repair. Nor do such practitioners always use those more conservative agents to good advantage. Witness Sir B. Brodie, who in his last publication advises, in the greater number of joint and spinal cases, aperient medicines and a course of iron "for two or three years!" Were painters, like medical men, to be paid by the number of visits instead of for the picture (or case), what a tedious affair would be the sitting for a portrait! Silly, simple Mr. John Bull, do you take your doctors and surgeons to be angels, that you thus bribe them to mistreat you? How can you expect your apothecary to call in a physician to cure you speedily, if you make it the sole object of both to keep you in their clutches as long as they possibly can, by every art of chicane and collusion? The last man in the world your ordinary medical attendant would allow to enter your room, as things are now managed, would be a physician, who, to the "detriment of science"—shop!—should show even the wish to shorten that worthy's professional bill by *your* too quick cure. Not where his reputation is concerned? No! The reputation of a physician does not depend on his cures! The reputation of a physician depends on his power to assist the apothecary in securing the greatest number of victims, and on his authoritative support of his measures throughout a long and lucrative attendance! Medical reputation with the surgeon-apothecary is one thing, and with the patient another. So far as the sick are concerned, modern medical reputation is a mere bubble. In one day the general practitioners of any town in England, by their collusive breath, can, and constantly do, make the greatest rogue or fool in the place figure as the greatest physician; and thus it is in physic as in fermentation, the scum of necessity *must* rise to the top!

If such be one of the many obstacles to a proper appreciation of any great medical truth in England, it is some consolation to discoverers to know that things have not yet come to quite the same pass in other countries. In the United States of America the Chrono-thermal system, on its first promulgation there, as I expected, met with a very considerable opposition. A truly scientific system of medicine that could do without blood-letting was a thing unheard of. Equally unheard of was the periodicity of all disease. In a review of the *Fallacies of the Faculty*, the editor of the *New York Medical and Surgical Journal* thus opened the battle: "That a mode of treatment—blood-letting—that has been in use from the most remote antiquity; that has, as it were, by intuition or instinct been employed by uncivilised nations for the relief of various maladies; whose benefits have been acknowledged by all medical writers and all accurate observers of every age; which still maintains its ground against the cavils of the *interested* (the patients have an interest!) and the prejudices of the *ignorant* (whom I have instructed)—that such a remedy is now to be cried down and banished from the world by *such a book as this* is almost as probable as that sickness is about to disappear from the earth!"

Reader! only think of the latter probability! How near must be its accomplishment, when in a recent number of the same journal, from which I extract this diatribe, we actually *now* read the announcement that "Bleeding is not a remedy at all!" The American doctors, like certain doctors nearer our own doors, begin now to question the value of blood-letting, even in apoplexy and inflammation of the chest. So much for this once-vaunted remedy, which the London apothecaries tell their patients, not I, but they, have put down!

But I must now let my readers see what certain American writers said at first on those equally important points of my doctrine—Periodicity, Temperature, and Type. In his December number for 1845, the editor of the *Boston Medical and Surgical Journal* tells his readers, "after devoting more time to Dr. Dickson's book than we originally intended, we can conscientiously say, that in the treatment of disease we find nothing new *except* the banishment of blood-letting, blisters, setons, issues, &c." Which assertion the writer immediately stultifies by his declaration that the "Unity and universality of all diseases is the very doctrine which Dr. John Brown taught forty years ago—embracing *all* the theory of Dr. Dickson *except* (except!) his periodi-

city, temperature, and type!"—"And these," the editor complacently adds, "will, ere long, be settled as sheer humbuggery!" Begging Mr. Editor's pardon, he is mistaken both in his fact and in his assumption. Instead of the unity and universality, Dr. John Brown actually taught the *duality* or diversity of disease—all disorders, according to him, being either disorders of "sthenia"—strength, or "asthenia"—weakness. In the first case, Dr. Brown recommended blood-letting and purgation—in the second, brandy and opium! There is not a *resemblance* even in our essential doctrines! Then, so far from periodicity, temperature, and type, as my "brother Jonathan" prophesies, being *yet*, at least, "settled as sheer humbuggery," what greater proof could he have of the truth of those *main features* of my discovery than the plagiarisms these pages disclose—plagiarisms by such men as Brodie, Holland, Todd, Marshall Hall, &c.? True, all these doctors are merely Englishmen, and England is not America. True, the Yankees are "pretty considerably acute." How annoying, then, must it be to my brother Jonathan when he finds that even on American soil, such is now the high appreciation in which "Dr. Dickson's quackery" is held, that a college has been actually formed in Philadelphia for the purpose of teaching medicine on chrono-thermal principles! At this very hour, in the United States of America, upwards of four hundred practitioners, with those distinguished men, Dr. Turner and Dr. Emerson Kent at their head, openly adopt the writer of these pages for their medical guide. The great people of that great country have anticipated what, I hope, may be the verdict of posterity here. From the Far West I receive, by almost every ship that leaves her shores, testimonials to the magnitude of my discovery—a discovery that, sooner or later, must take from medicine its reproach of centuries.

The reader can now decide for himself how far Byron was right when he stigmatised it as the "Destructive Art of Healing."

Those who are careful to avoid offending others, are seldom apt to take offence themselves.

VARIETIES.

ANIMALCULES.—The astronomer turns his telescope from the earth and ranges over the vast vault of heaven, to detect and delineate the beautiful objects of his pursuit. The naturalist turns his microscope to the earth, and in a drop of water finds a wondrous world of animated beings, more numerous than the stars of the milky way, and these he classifies into genera, and families, and catalogues, in his history of the invisible world. Numerous and extensive, indeed, must be these objects of his study, where there is no condition of water, from the most fetid to the most crystal, but teems with animated nature. Thus the stagnant pond, the limpid stream, the bubbling spring, the extensive watershed, the majestic river, the broad lake, the mighty ocean, the deep mine, the unstable bog, the torrid zone, the arctic regions, the forest leaves, the lowly herb, the lovely flower, the living plants, the ocean garden, the guano of Ichaboe, the skin and interior of animals, as well as that of haughty man, are all infested with living animalcules, many having even parasites existing on them more minute than their own invisible bodies. Providence, in His almighty wisdom, has formed them for carrying out the scheme of creation with harmony, freshness, beauty, and continuity. The revolutions in matter the little beings create are incessant and immense, and, in Divine love to man, beneficial to his well-being.

CHARCOAL PAPER FOR FILTERING AND FOR THE PRESERVATION OF FOOD.—Messrs. Pichot and Malapert have succeeded in preparing paper containing a greater or less proportion of powdered animal charcoal, previously purified by acid. The charcoal is either mixed with the whole pulp, or, in making the paper, is inserted between the layers of pulp, so as to form an intermediate layer in the paper. As the mixture of charcoal with the pulp lessens the strength of the paper, this objection must be removed by inserting a piece of gauze in each sheet of paper, or only in the centre of each sheet, when they are required to be used as filters, so as to strengthen that part which forms the point of the filter. The pulp for this paper may be made of hemp, linen, or cotton rags, and for especial purposes woollen or silk rags may be used. All the materials are purified as much as possible without the aid of soap or alkaline substances, and with water as free as possible from earthy salts. The paper is made of different thicknesses, and may be used for wrapping fish, game, and flesh that is to be sent to a distance.—*Genie Industriel.*

INFLUENCE OF VARIOUS PURSUITS ON HEALTH.—Studies that exercise especially the reasoning faculties, whose aim is truth, and which are attended with positive and satisfactory results, affording the most calm and permanent gratification, are the most safe and salutary in their influence on body and mind. Hence it is that those engaged in the exact sciences, as the mathematician, the astronomer, the chemist, usually enjoy better health, firmer nerves, more uniform moral tranquillity, and a longer term of existence than those whose pursuits are more connected

with the imagination; as the poet, or writer of fictitious narrative. In these latter the deep and varying passions are more frequently awakened, a morbid sensibility is encouraged, and the flame of life exposed to such a continual and unnatural excitement, must burn more unequally and waste more rapidly. Who does not rise with more self-satisfaction, with a more calm, equable and healthful condition of the mind, from studies which exercise and instruct the intellect, than from the morbidly exciting works of romantic fiction? Poetry and romance, then, as they wander from the standard of nature, must always become the more prejudicial in their moral effects on the moral and physical constitution. To illustrate this remark, we need but refer to the writings of Byron and Scott.

NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague Place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 22.

PERIOD OF DECLINE.

The decline of life exhibits a much more obvious diminution of the whole vital power of the organism; for not only is its formative activity now greatly reduced, but its nervo-muscular energy and general vigour progressively diminish, and its generative power becomes enfeebled, or ceases entirely. Of this diminution in formative power we have evidence in the entire absence of any attempt at new development in the less perfect and more tedious manner in which the losses of substance occasioned by disease or injury are recovered from, and in the gradual deterioration of the organism in general. The tissues, which are rendered effete by their functional activity, are not any longer replaced in their normal completeness; for either the quantity of new tissue, so that the bulk of the organs is obviously reduced; or their quality is rendered imperfect by the production of structures in various phases of degeneration, in place of those which had been previously developed in the fullest completeness. The inferiority of nervo-muscular energy and of general vigour are thus evidently the result of deficiency and not (as in the period of growth) of the excess of formative power; and in proportion as the waste of the tissues, consequent on their functional activity, is more rapid than their renovation, a progressive loss of substance must take place.

The forms of degeneration most commonly met with in advanced age are the *fatty* and the *calcareous*. The former is extremely prone to show itself in those organs whose integrity of structure is peculiarly important to health, and whose deterioration interferes directly with the vital properties of their component tissues. Thus we observe it in the muscular apparatus generally, but pre-eminently in the walls of the heart; and in proportion as its contractile fibre has been replaced by particles of fat, must the vital energy of any muscle be lowered. So, again, we find the same degeneration in the liver, kidney, and other parts of the glandular apparatus; the proper secreting action of which is impaired in the ratio of the substitution of fat for the proper glandular elements. But it may also lead to most serious derangements of the vital functions by its interference with the purely mechanical actions with certain parts of the organism: thus, fatty degeneration of the walls of the blood-vessels is one of the most frequent causes of those extravasations of blood in the nervous centres which give rise to the apoplexy and to the various forms of paralysis so common among the aged; and the same change occurring in the bones gives them that peculiar brittleness which they frequently exhibit in advanced periods of life. That general decline of the vital powers, which has received the name of climacteric disease, appears traceable to the same source. The tendency of the calcareous degeneration (which especially affects the cartilaginous and fibrous tissues) is almost exclusively to interfere with the *mechanical* adaptations of the organism, producing an injurious rigidity in various structures, which require a greater or less amount of flexibility for the normal performance of their functions.

Thus it is very common for the cartilages of the ribs to become ossified in advanced life, so as to interfere with the free movement of the walls of the thorax; and the thyroid cartilages of old people are frequently converted into bone, producing a roughness of the voice and deficiency of the power of modulating it. The intervertebral substance (which is partly cartilaginous and partly fibrous) not unfrequently becomes solidified in the lumbar region, as do also the spinal ligaments, so that several of the lower vertebræ are firmly fastened to each other and to the sacrum; and a like change often takes place in the pelvic articulations, so that the pelvis and lower part of the spine become one continuous mass of bone, destitute of flexibility in any part. In like manner the cranial sutures often become obliterated, and calcareous deposits occur in the duplicatures of the dura mater. A large amount of this kind of change may take place without any serious interference with the organic functions, although it tends to curtail the animal powers. When the calcareous degeneration, however, extends itself to the vital organs, the interruption which it occasions in their actions may be fatal. Thus, next to fatty degeneration, there is probably no more frequent cause of failure of the heart's action, or of extravasation from the blood-vessels in old persons, than ossification of the valvular apparatus of the former, depriving it of the flexibility which is essential to its proper action; or of the fibrous walls of the latter, imparting to them a brittleness which predisposes to rupture.

Thus, then, with the advance of old age the organism becomes progressively more and more unfit for the active performance of its vital operations; a gradual weakening is observable in the mental as well as in the corporeal energy; and a retardation becomes obvious in the current of organic life. The mind is far less active than in the periods of maturity; the perceptions are dull, the feelings comparatively obtuse, the intellectual powers cannot so readily be put in action, and the imagination loses its vividness; there is a greatly diminished power of sustaining the heat of the body, the temperature of which consequently becomes liable to a serious depression from external cold. This retardation of vital activity gradually becomes more and more marked, and the current stops of itself. The formative power seems to undergo a progressive exhaustion until no assistance from artificial heat, no supply of the most nutritious food can any longer avail for the generation of new tissue; the nervo-muscular energy gradually declines, until at last even those actions on which the circulation and respiration entirely depend can no longer be performed; and with the cessation of these functions, the life of the entire organism becomes extinct.

MR. J. MILLER'S AMERICAN BREAD.

Among the minor ills that mankind are heirs to, there are but very few that are fraught with more distress and utter inaptitude to enjoy ourselves, the society of our friends, or any of the amusements offered to our notice, be our means whatever they may, than the toothache. Who among us have not exclaimed (with Burns) against its venomed sting, which shoots our tortured gums along, and with all the fervour of distraction desiring freedom from pain which at times is so agonising that it would be perfectly unbearable, did we not know that it is not dangerous. Hence, though tortured, we are not frightened, and that when relieved no ill consequences follow. The above picture will be recognised by many as being, alas! too true, and pity 'tis 'tis true; but there is another disease, almost as universal a disease, though not so racking in its immediate effects, yet subjects the sufferer to all that loss of enjoyment in every position which the former does, and is accompanied with danger, silently but surely sapping the foundations of health, and will, without its being permanently arrested, not only frequently bring on all the agonising pangs of the former, but end in premature death. This disease is dyspepsia, or commonly known under the general name of indigestion, a disease more prevalent in London than anywhere else; indeed so prevalent that it may be called an endemic, under which by far the greater number of its inhabitants are more or less suffering. Fits of the toothache are transient, and generally of short

duration. Indigestion is, alas! a continuous companion, and though at times relieved by medicine, still, as the cause is daily persisted in, it overcomes the health-giving powers even of our botanical medicine, in the same manner as the sea overcomes the rocky and precipitous obstacles opposed to its fury, and as surely. It is quaintly but truly said that a knowledge of a disease is half its cure; and it is not our wont to point out disasters without directing the afflicted to the remedies for their eradication.

Bread is universally allowed by all civilised nations to be the staff of life, and almost the *sine quâ non* of existence, and to its want of purity (nay, start not, reader, for it is true) all the endemical indigestion of the London people is owing; its want of purity being the principal cause of all the sufferings entailed upon the dyspeptic.

The natural question then arises, What produces this deleterious quality in so important an article of food? and next, How is this to be obviated?

To the first we answer, that bread is adulterated to a most alarming extent with ALUM, especially that made with inferior flour, not particularly taking into consideration plaster of Paris, which is extensively used, and adds to the cause of disease.

Alum is used most extensively under the colour of making the bread white and pleasing to the eye. To its styptic and binding qualities daily, nay, almost hourly, introduced into the system, is that horrid monster indigestion to be ascribed, and as surely as such bread is used, so surely will chronic indigestion prevail, and ultimately sink the sufferer into a premature grave.

We have thus clearly pointed out the cause and consequences of this most distressing disease; this illness in apparent health; and we now direct the sufferer to the remedy—which is, bread produced pure, and consequently free from alum or any other noxious ingredient. This, you say, we know. True; but we will extend your knowledge by acquainting you where this pure bread is to be obtained: namely, of Mr. Miller, the sole patentee, 17 and 18, Upper George Street, Bryanstone Square; and the following licencees and agents:—

M. Clark, Ratcliff (who also manufactures this bread).
Mr. Edwards, 138, High Holborn.
Mr. Mead, the top of St. Martin's Lane, Seven Dials.
No. 3, Anabella Street; and of Mr. Heal, Bristol, licencee.

Mr. Miller receives numerous letters, commendatory of this valuable domestic article. We will give an extract to prove that all which we have stated is not exaggerated. The Rector of Stanford-le-Hope, Essex, writes, "Your bread has agreed wonderfully well with me, and I shall be indeed vexed if obliged to give it up." And again he writes, "I find no bread agree with me so well; and although it costs me one shilling for the carriage of six loaves alone, I do not murmur at it. Send more directly, otherwise I shall get indigestion as bad as ever." This, we think, ought to satisfy the most incredulous, and corroborates its careful analysis by Mr. Pepper and Dr. Hassel, who both unite in declaring it to be pure. Indeed, such are its beneficial effects upon the constitution, that a knowledge of it ought to be spread throughout the length and breadth of the land; every town ought to have a seller, and every one who desires good bread and to be continued in health, ought to become a purchaser.

ON THE PRESERVATION OF HEALTH IN WOMEN,

AT THE CRITICAL PERIODS OF LIFE.

THE perfection of *womanhood* is obtained by retarding, as much as possible, the appearance of first menstruation. For the attainment of this important object use wholesome food, early rising, and rational exercise at judicious times. By no means let young girls of from twelve to sixteen lounge on sofas or soft cushions, &c., nor read harrowing tales, novels, or exciting books, as regards the reproductive functions; and let them have full and active employment. The regular functions of the body must be kept up, the frame invigorated by out-door exercise, at the same time they ought to be properly and warmly clothed; wear drawers, and the chest and body kept warm. Should menstruation come on and continue regular at such times, let

care be taken to dress warmer, and not to be exposed to sudden cold; and we would recommend short drawers to be worn at all ages.

Feather beds are not good for girls; woollen mattresses are best; and they ought to be taken to pieces and repicked every year. Teach them to bear pain, and let them avoid all undue excitation. From the above, the following important rules are adduced:—

1st. Keep a girl under proper restraint as long as possible.

2nd. Let her not be in company with men unawares.

3rd. Never attempt to bring on first menstruation by forcing medicines.

Many exciting causes may happen to determine the appearance of the flux, before its proper time, and that in an unusual manner; such, for instance, as a very long walk, a bad fall, a fright, or violent emotion.

Should such an event as the one above stated take place, let the patient be kept warm, and drink freely of composition and raspberry leaf tea. If flooding comes on to an alarming extent, give lobelia inflata to nauseate, or even to vomit; give also a vapour-bath, with proper doses of cayenne pepper or hot composition powder tea, in conjunction with the Indian pills. This mode of treatment will soon relieve.

No danger is to be apprehended if in young girls who have once menstruated the discharge stops for a time; use no forcing medicines, but keep the body healthy by relaxation from severe study, and by exercise; and by all means avoid calomel.

When irregular menstruation takes place, suppose in a fortnight or three weeks, it is a disease: reform the whole habit by tonic herbal medicines, and the flow will become regular. In strong women, a copious flow may be permitted to take place, if their *pulses* be *firm;* but in the weak and nervous it is truly a disease, and brings on leucorrhœa, and it will cause miscarriage in the early months of pregnancy. From what has been here stated the following rules are adduced:

1st. Never take forcing medicines to promote the reappearance or increase of the menstrual flow.

2nd. Never let the female constitution be undermined by copious or *very painful* menstruation, or by allowing it to return at shorter periods than once a month.

3rd. Mothers must never be so reckless of their own or their daughters' health as to suffer a medical man to prescribe in ignorance of their situation.

RULES FOR MARRIED LIFE.

1st. Respect whatever may have received life.

2nd. A knowledge of the possibility of menstruation continuing during pregnancy, and of the danger of confounding this with other uterine discharges.

3rd. A knowledge of the possibility of menstruation continuing during suckling without in any way acting against it.

ON THE MANAGEMENT OF WOMEN AT AND AFTER THE STOPPAGE OF MENSTRUATION.

We introduce this part of the subject by a statistical account with respect to the quantity of the menstrual flow.

It terminated gradually in	195	women out of	500
,, by a succession of floodings in	95	,,	,,
,, by a terminal flooding in ..	70	,,	,,
,, By alternations of a little and a considerable flow in..	50	,,	,,
,, By a sudden stoppage in ..	90	,,	,,

As to periods of its recurrence:—

It appeared at irregularly protracted intervals in	395	out of	500
,, ,, periods	105	,,	,,

Observation.—Gradual termination is most usual.

A terminal flooding has been sometimes taken for a miscarriage, and the contrary.

The sudden stoppage requires more attention, because it has been taken for pregnancy in advanced life. In this case do not give forcing medicines. The opposite of this is sometimes the case.

It should never be forgotten that pregnancy happening towards the fiftieth year has been too often taken for an ovarian tumour and treated as such; this may cause the death of both mother and child.

Should the flow stop and reappear some years after, no bad consequences are to be apprehended; though it is necescessary to ascertain whether such flow proceeds from disease or not.

The diseases of the critical time may be divided into—

1. Those of frequent occurrence, which may be foreseen.

2. Those which occur as a repetition of diseased appearances observed previous to first menstruation.

3. Others which escape all our calculation, which are to be experienced by the violence of diseased action, which shows most forcibly on the weakest organ.

Diseased actions occurred at cessation :

Headache, sick ditto, hysteria, had existed at menstruation ..	in 320	out of	500
,, augmented	in 180	,,	,,
,, remained the same..	in 90	,,	,,
,, less	in 50	,,	,,
,, did not exist	in 180	,,	,,

The most usual symptoms of menstruation are a dull, heavy, stupid feeling, with a great tendency to sleep, observed mostly before the first and last menstruation, also in consequence of sudden suppression. Women complain, at various times, of dimness of the eyes, heaviness of head, a dull feeling, headache and unusual heaviness.

SPINAL SYMPTOMS.

Spinal or dorsal pains had existed in	350	in	500
,, ,, increased ..	in 250	,,	,,
,, ,, the same ..	in 85	,,	,,
,, ,, less	in 35	,,	,,
,, ,, did not exist	in 150	,,	,,

(To be continued.)

MEDICAL EDUCATION.

(Continued from page 57.)

We shall not run the risk of prophesying how many medical associations would be formed in the spontaneous way just indicated if the State were wholly to sever all existing bonds between it and the profession; we feel perfectly assured, however, that the number and quality of such institutions would exactly equal the demand for them, and no more. Those pseudo-medical reformers who implore further aid of the State, demand uniformity of medical education throughout the three kingdoms, the character and extent of such education to be determined by a central council, having the supreme government of the profession. They support this demand by the assertion that the numerous medical bodies now existing "compete downwards" in granting their diplomas; that being more anxious for the fees paid for them than for evidence of professional knowledge and ability, the examiners vie with each other in making their examinations easy, in order to attract candidates, many of whom are thus licensed rather to kill than to cure. We freely admit and deplore the truth of this assertion; but we are very far from assenting to the argument based upon it. This competition downwards is a fruit of the protective system. The State has so long undertaken to protect the public from the practice of unqualified doctors, that the public has become thoroughly habituated to regard it as a responsible medical guardian, and therefore to look on all diplomas granted by its authority as valid and trustworthy testimonials of professional competency. Confiding in this protection, the people accept a member of any of the surgical colleges as a properly qualified surgeon, and, in like manner, a licentiate of any of the Medical Colleges, or a medical graduate of any of the Universities, is accepted as a duly educated physician. So long as a surgeon is a surgeon, or a doctor a doctor, by Royal authority, or Act of Parliament, the great majority of the people will employ him with child-like trust, and never dream of inquiring what may have been the character of his education or the comparative worth of the examination he passed through. The numerous medical and surgical colleges, as well as the universities, are perfectly aware that in the eyes of the public one diploma is as good as another; that if a first-rate education is not insisted on by the public, medical students will not encounter the labour of such an education, but will obtain those diplomas which are to be had on the easiest terms; and hence it is that the various bodies of examiners, who divide amongst themselves a large part of the fee paid for each diploma, rival each other in offering their testimonials on the easiest terms. When Sir James Graham was struggling to enact his proposed reforms, which for the time must have increased the stringency of examinations, "there was a rush," we are told by Dr. Paris, from various parts of the country to the London College of Physicians, to obtain the extra license which, according to the registrar, Dr. Hawkins, "became a sort of side door, by

which many persons sought to gain admission, with less trouble and less expense, into the order of Physicians." During the eleven years previous to 1845 the number of candidates at St. Andrew's for the degree of M.D. averaged 27 each year; but in 1845, the effect of Sir James Graham's threats of reform was felt as strongly at St. Andrew's as in London. During that year, 128 candidates "rushed" to St. Andrew's for the degree of M.D., and the same extraordinary increase in the number of graduations occurred at the same time in the College of Edinburgh, as appears from the published returns. Presuming on the trust reposed in men having a diploma, no matter where obtained, there was, as late as 1847 at least, an office in Tottenham-court-road for the sale of German degrees, and in this very year the following advertisement appears in the columns of *The Times*:—

"Degrees.—Duly qualified gentlemen, desirous of obtaining their degrees from foreign universities, receive instructions how to proceed in the statutably prescribed way by applying to D.M., 38, Great Pulteney-street, Golden-square."

One college (as that of Edinburgh) offers its diploma for a small sum of money, another for a small sum of knowledge. Ireland produces about 150 candidates for the surgical diploma each year; but during the ten years ending 1856, an average of only 51 yearly obtained the diploma of the Dublin college; the remainder, or 100 a year, come to the London college for its diploma, because the examination of this college is much less comprehensive than that instituted by its Irish rival. By an arrangement between the London College of Surgeons and the London Apothecaries' Company, their respective examinations supplement each other; hence the college restricts its examinations to anatomy, physiology, and surgery. It is supposed that each candidate passes both examinations; but, in fact, 4915 persons passed the college during the ten years ending 1855, whereas, only 2823 obtained the Apothecaries' licence during the same time. And yet, strange to say, the diploma of the London college, which, as a testimonial of efficiency, is, for the reason just stated, not only inferior to that of the Dublin college, but to that of the Edinburgh college, is esteemed by the public, we believe, as superior to both. These curious results are directly traceable, we repeat, to State interference. If this interference were to cease, and the Government were virtually to say to the public, "Take care of yourselves," a change for the better would quickly begin. The more educated part of the people, feeling that they must judge for themselves as to the character and skill of the medical men they employ, would acquaint themselves with the nature of the examination instituted by the several examining bodies, the kind and extent of education exacted, and would thus form an opinion as to the comparative worth of the testimonials conferred by each institution. To obtain such knowledge is much less difficult than would-be medical legislators are disposed to admit. If the people once have the conviction that in this matter they remain ignorant at their peril, they will take as much interest in it as they have been wont to do in theology, and will speedily obtain the data requisite to enable them to judge rightly. The lower classes would be influenced by those above them, while the appointments to poor-law unions or public charities would not be made until the authorities had instituted the scrutiny we have indicated. This public consciousness of self-responsibility would soon cause each medical institution, whether those now existing, or those which would arise, were the State to withdraw its protection, to be distinguished according to its merits, and would therefore determine to those likely to enjoy most public favour, the majority of candidates for professional degrees. These causes would react on the institutions themselves, which would immediately consult their individual interests by competing *upwards* instead of *downwards* for candidates. They would make known, not only to the profession but to the public at large, their respective curricula of study, or the nature of their examinations, and would appeal to the public for its favour and support, by striving to excel each other in the advantages respectively offered. The knowledge needed by the people to enable them to

judge of the fitness of medical men, would thus be brought to their very doors, while the principle of competition, unimpeded by the accord of State protection to any one medical body, and allowed freely to do its work, would raise the numerous standards of medical education to the highest pitch at which they could be severally sustained consistently with ensuring a sufficient number of medical men to supply the wants of the community.

The advocates of one universal standard of medical education, to be established by Act of Parliament, are in the awkward dilemma of being obliged to admit that the standard must be lowered to such a minimum as will enable the most inferior class of the profession, constituting the great bulk of practitioners, to pass the examination determined on, or that the country will not be adequately provided with medical aid. Thus, those reformers would override the natural and beneficent tendency of the medical body to graduate itself into orders of merit, and would ignore the different requirements of the various classes of a highly civilised community. The wealthy, who are able to pay for the most highly educated and most skilful physicians obtainable, draw into the profession a class of men whom the poor can never afford to employ: to institute an examination, by authority of Government, which the great body of the profession may pass, would be no kind of test of the general professional education of such men; whereas, if the legal examination were raised to the standard of their education, the number of men who would incur the expense of the education which such an examination would necessitate would be comparatively small, because the fees obtainable from the middle and lower classes could not remunerate them for their labour and outlay. Deprived by the pseudo-protection of Government of those moderately educated practitioners whom they could afford to pay, these classes would mainly depend on druggists, quacks, and "old women," for medical aid. It is alleged that the lower classes do not like, even if they could afford, to call in medical men whose social status is so far above them as is that of a highly educated physician. Dr. Burrows, in his evidence in 1848, cites the statement of one of the country people—"He is so much of a gentleman I do not like to go to him."

We must admit that the danger of overrefinement in the rising generation of medical men is not serious. Judging from the general want of preliminary education, the kind of pleasures, and the prevailing tone of mind which characterise the majority of medical students at the London schools, we imagine that the simplest of the vulgar will long continue to discover points in common between himself and his "doctor." Advantages may, perhaps, be seen even in this aspect of the subject. At all events, we believe that a good general education, comprehensive views, and a philosophical habit of mind are not so essential to the medical attendant of the lower classes as they are to the physician of the higher classes.

In individuals whose minds, destitute of culture, remain undeveloped, disease presents itself in its simplest and most typical forms, and may, therefore, be treated with greater comparative safety, *secundem artem*, or according to those principles and rules which every man of ordinary capacity may acquire when a student. But the diseases of persons whose minds are highly cultivated and developed, are often complicated, modified and dominated by subtile psychical influences, whose intensity and bearing on the physical malady it is difficult to apprehend and appreciate, and which it is still more difficult to contend with and control. In other words, the more civilised and refined people are, the more individual, peculiar and manifold do their natures become; and in proportion as their ideas, interests, and emotions are many-sided and complex, will be the ascendancy of the mind over the body, and the consequent need that their medical advisers should be psychologists and moral philosophers as well as physicians. From this point of view alone, the folly of attempting to establish, by authority of Parliament, one uniform standard of medical education, is glaringly conspicuous; but even apart from any other consideration, the pecuniary argument, as already urged against such a scheme,

seems to us irresistible. This conviction —that at bottom the question of medical education resolves itself into a question of money—entails the necessity of inquiring what the cost of medical education is, and how the money is spent.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

HIPPOCRATES.

(Continued from page 46.)

We now proceed to consider particularly the remedies employed by Hippocrates.

Diet was the first, the principal, and often the only remedy he made use of: by means of it he opposed moist to dry, hot to cold, &c.; and thus he supported nature, and assisted her to overcome the malady. The dietetic part of medicine was so much the invention of Hippocrates himself, that he claimed to be the author of it; and says, that the ancients had wrote almost nothing concerning the diet of the sick, having omitted this point, though it was one of the most essential parts of the art. The diet he prescribed for patients labouring under acute distempers differed from that which he ordered for those under chronical ones. In the former he preferred liquid food to solid, especially in fevers. For these he used a sort of broth made of cleansed barley, which he called ptisan. The manner in which the ancients prepared ptisan, was this: They first steeped the barley in water till it was plumped up; and afterwards they dried it in the sun, and beat it to take off the husk. They next ground it; and having let the flour boil a long time in the water, they put it out into the sun, and when it was dry they pressed it close. This flour was properly the ptisan. They did almost the same thing with wheat, rice, lentils, and other grain; but they gave these ptisans the name of the grain whence they were extracted, as *ptisan of lentils*, *rice*, &c. whereas the ptisan of barley was called simply *ptisan*, on account of its excellency. To use it, they boiled one part of it in ten or fifteen of water; and when it began to grow plump in boiling, they added a little vinegar, and a small quantity of anise or leek, to keep it from clogging or filling the stomach with wind. Hippocrates preferred the ptisan to all other food in fevers, because it was soft, and of easy digestion. In a continual fever, he ordered the patient to begin with a ptisan of a pretty thick consistence, and go on by little and little, lessening the quantity of barley flour as the height of the distemper approached; so that he did not feed the patient but with what he called the *juice of the ptisan;* that is, the ptisan strained, where there was very little of the flour remaining, that nature, being discharged in part from the care of digesting the aliments, might the more easily hold out, and overcome the distemper, or the cause of it. He caused the ptisan to be taken twice a day by such patients as in health used to take two meals a day; but he would not allow it twice a day to those who eat but once a day in health. In the paroxysm of a fever he gave nothing;

and in all distempers where there are exacerbations, he forbade nourishment while the exacerbations continued. He let children eat more; but those who had grown up, or were of an advanced age, less; making allowance, however, for the custom of each patient, or for that of the country. But though he would not allow too much food to the sick, he prohibited long abstinence, especially in the beginning of fevers. The contrary practice, he said, weakened the patients too much during the first days of the distemper, by which means their physicians were obliged to allow them more food when the illness was at its height. Besides, in acute distempers, and particularly in fevers, he prescribed refreshing and moistening nourishment: and among other articles, oranges, melons, spinach, gourd, and dock. This food he gave to those who could eat, or take something more than ptisan. The drink he gave to his patients was made of eight parts of water and one of honey. In some distempers he added a little vinegar; they also had another sort named κυκεὼν, or *mixture;* which consisted of rue, anise, celery, coriander, juice of pomegranate, the roughest red wine, water, flour of wheat and barley, with old cheese made of goats' milk. Hippocrates did not approve of giving plain water to the sick; but he did not forbid wine, even in acute distempers and fevers, provided the patients were not delirious, nor had pains in the head. He preferred white wine that is clear and has a great deal of water, with neither sweetness nor flavour. These are the chief particulars concerning diet prescribed by Hippocrates in acute distempers; in chronical ones he made much use of milk and whey.

In many diseases he judged the bath a proper remedy. Among the circumstances necessary to cause the patient to receive benefit from it, the following are the principal: The patient must remain still and quiet in his place without speaking, while the assistants throw water over his head, or are wiping him dry; for which last purpose he desired them to keep sponges, instead of that instrument called by the ancients strigil, which served to rub off from the skin the dirt left upon it by the unguents and oils with which they anointed themselves. The patient must also take care not to catch cold; and must not bathe immediately after eating and drinking, nor eat or drink immediately after coming out of the bath. It should also be inquired, if the patient has been accustomed to bathe while in health, and whether he has been benefited by it. He must abstain from the bath when the body is too open, or too costive, or when he is too weak; or if he has an inclination to vomit, a great loss of appetite, or bleeds at the nose. The advantage of the bath consists in moistening and refreshing, taking away weariness, making the skin soft and the joints pliant; in provoking urine, and opening the nostrils and other excretories. Hippocrates allowed two baths in a day to those who have been accustomed to it.

In chronical distempers Hippocrates approved much of exercise, though he did not allow it in acute ones; but even in these he did not think that a patient ought always to lie in bed; but says, "we must sometimes push the timorous out of bed, and rouse up the lazy."

When diet and exercise were not sufficient to ease nature of a burden of corrupted humours, he made use of other means, of which purgation was one. By this word he understood all the means used to discharge the stomach and bowels; though it commonly signifies only evacuation by stool. This evacution he imagined to be occasioned by the purgative medicines attracting the humours to themselves. When first taken into the body, he thought they attracted that humour which was most similar to them, and then the others, one after another. Most of the purgatives used in his time were emetics also. These were the white and black hellebore; the Cnidian berries, or seeds of thymelea or chamælea; cheorum peplium, a sort of milk-thistle; thapsia; the juice of hippophaë, a sort of rhamnus; elaterium, or juice of the wild cucumber; flower of brass, coloquintida, scammony, the magnesian stone, &c. These purgatives being all very strong, Hippocrates was very cautious in their exhibition. In his books *Of Epidemical Distempers*, there are very few patients mentioned to whom he gave purgative medicines. He says expressly,

that these medicines, having been given in cases of the distempers of which he was treating, had produced very bad effects; though in some places he mentions his having given them with success. He reckoned purging good in a pleurisy, when the pain was seated below the diaphragm; and in this case he gave black hellebore, or peplium, mixed with the juice of laserpitium, which is supposed to have been our assafœtida. His principal rule with regard to purging is, that we ought only to purge off the humours that are concocted, and not those that are yet crude; taking particular care not to do it at the beginning of the distemper, lest the humours should be disturbed or stirred up. The Egyptian physicians had also remarked, that it would be of ill consequence to stir the humours in the beginning of an acute distemper. By the beginning of a distemper, Hippocrates understood all the time from the first day to the fourth, complete. Hippocrates imagined that each purgative medicine was adapted to carry off some particular humour; and hence the distinction of purgatives into hydragogue, cholagogue, &c., now justly exploded. In consequence of this notion, which prevailed long after his time, he pretended that we knew if a purgative had drawn from the body what was fit to be evacuated, according as we found ourselves well or ill after it.

Emetics were also pretty much used as medicines by Hippocrates. To the sick he sometimes advised the same with those above mentioned as preventives, when his intentions were only to cleanse the stomach. But when he wished "to recall the humours from the inmost recesses of the body," he made use of brisker remedies. Among these was white hellebore, which he gave most frequently to excite vomiting, particularly to melancholy and mad people; and from the great use made of it in these cases by him and other ancient physicians, the phrase "to have need of hellebore," became proverbial, for being out of one's senses. He gave it also in defluxions, which come, according to him, from the brain, and fall on the nostrils or ears, or fill the mouth with saliva, or that cause stubborn pains in the head, and a weariness or an extraordinary heaviness, or a weakness of the knees, or a swelling all over the body. He gave it to consumptive persons in broth of lentils, to such as were afflicted with leucophlegmatia and other chronical disorders. But he made no use of it in acute distempers, except in the cholera morbus. Some took this medicine fasting; but most took it after supper, that, by mixing with the aliments, its acrimony might be abated, and it might operate with less violence on the membranes of the stomach. With the same intention he also gave a small plant called sesamoides, and sometimes mixed it with hellebore. In certain cases he gave what he called soft or sweet hellebore; either from its quality, or perhaps from the quantity given.

When Hippocrates intended only to keep the body open, or evacuate the intestines, he used simples; *e. g.*, the herb mercury, or cabbage, the juice or decoction of which he ordered to be drunk. For the same purpose he used whey, and also cows' and asses' milk with a little salt, and sometimes boiled a little. If he gave asses' milk alone, he caused a great quantity of it to be taken, that it might loosen the body. In one place he prescribes no less than 9lbs as a laxative. With the same intention he made use of suppositories and clysters. The former were compounded of honey, the juice of the herb mercury, of nitre, powder of colocynth, and other sharp ingredients. These were formed into a ball, or into a long cylindrical mass like a finger. The clysters were sometimes the same with those already mentioned as preventives. At other times he mixed the decoction of herbs with nitre, honey, and oil, or other ingredients, according as he imagined he could attract, wash, irritate, or soften. The quantity of liquor he ordered was about thirty-six ounces, from which it is probable he did not intend that it should be all used at once. Hippocrates sometimes proposed to purge the head alone. This practice he employed, after purging the rest of the body, in apoplexy, inveterate pains of the head, a certain sort of jaundice, consumption, and the greater part of chronical distempers. For that purpose he used the juices of several plants, as celery; to

which he added aromatic drugs, making the patients snuff up this mixture into their nostrils. He used also powders compounded of myrrh, the flowers of brass, and white hellebore, which he caused them to put into the nose, to make them sneeze, and to draw the phlegm from the brain. For the same purpose also he used what he calls tetragonon, *i. e.*, "something having four angles;" but what this was, is now altogether unknown, and was so even in the days of Galen, who, however, supposes it to be antimony, or certain flakes found in it.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

NOTHING tends to imprint chemical facts upon the mind so much as the exhibition of interesting experiments. With this view the following selection has been made, in which such experiments as may be performed with ease and *safety*, have uniformly been preferred.

Experiments on Change of Temperature.

Take a small phial about half full of cold water; grasp it gently in the left hand, and from another phial pour a little sulphuric acid very gradually into the water. A strong sensation of heat will immediately be perceived. This, by the continued addition of the acid, may be increased to many degrees beyond that of boiling water.

Take a small phial, in one hand, containing some pulverised muriate of ammonia; pour a little water upon it, and shake the mixture. In this instance a sensation of cold will immediately be felt.

If the student be in possession of an air-pump, the following experiment may be easily performed:—Let him fix a small tin cup of *ether* within a large watch-glass containing a little water, and place both under the receiver of the air-pump. The exhaustion of the receiver will cause one of the fluids to boil, and the other to freeze at the same instant.

Place a phial of water, inclosing a thermometer, in a frigorific mixture, and by avoiding agitation, cool it some degrees below the freezing point. If it be now agitated, it immediately becomes solid, and its temperature instantly rises to 32°, an instance of a change of form occasioning an extrication of caloric.

Fill a small glass matrass, or flask, holding about half a pint, with any kind of coloured water, having previously put in a few tea-spoonfuls of *ether:* then invert the flask in a shallow vessel of water, and by degrees pour boiling water upon its bulb. By the sudden accession of heat the ether will be changed into vapour, which will force out the coloured water and fill the whole of the vessel. This experiment will afford an example of a liquid being converted into an elastic vapour by caloric.

For want of a proper glass vessel, a table-spoonful of ether may be put into a moistened bladder, and the neck of the bladder closely tied. If hot water be then poured upon it, the ether will expand, and the bladder become inflated.

Take a glass tube with a bulb in form of a common thermometer; fill it with cold water, and suspend it by a string. If the bulb be frequently and continually moistened with pure sulphuric ether, the water will presently be frozen, even in summer.

Dissolve five drachms of muriate of ammonia, and five drachms of nitre, both finely powdered, in two ounces of water. A thermometer immersed in the solution will show that the temperature is reduced below 32°. If a thermometer tube, filled with water, be now suspended within it, the water will soon be as effectually frozen as in the last experiment.

If a small thermometer be placed in a glass vessel containing about an ounce of a solution of soda, on adding a sufficient quantity of muriatic acid to saturate the soda, the mercury in the thermometer will expand, affording an instance of heat being produced by the formation of a salt.

Let the last experiment be repeated, with the *carbonate* of soda instead of pure soda, the mercury will now sink in the thermometer. Here, though the same kind of salt is formed, cold is produced.

Fill a thermometer tube with tepid water, and immerse it in a glass vessel of water of the same temperature, containing a mercurial thermometer. If the whole be now placed in a bed of snow, or in a frigorific mixture, the water in the tube will

suffer a progressive diminution of volume until it arrives at about 40°; it will then begin to expand gradually until it becomes solid. This shows how ice is enabled to swim on the surface of water.

Another example on this subject may be shown. Fill a thermometer tube with cold water, at about 32°, and immerse it in a vessel of warm water. In this case, the water in the tube will contract in volume till it arrives at about 42°, when it will appear for a time nearly stationary. If the heat be now continued, the effect will be reversed, for the water in the tube will *expand* as its temperature is increased. This is a curious instance of a chemical anomaly.

(To be continued.)

SUPERIOR SALUBRITY OF ENGLAND.—The Registrar-General, in his last report on births, deaths and marriages, says that it is now well established by extensive observation that England is the healthiest country in Europe. France stands next to England in salubrity. In the continental cities the annual rate of mortality is seldom less than 30 in 1000, and frequently as high as 40. In London the rate of mortality is only 25 in 1000. Statistical records prove that "the climate of England is eminently salubrious;" and it has not yet been shewn that the climate of any part of the continent is more salubrious than this island—crowned with hills of moderate elevation, sloping towards the east and the south; bathed by the showers of the Atlantic; drained naturally by rivers running short courses to the sea, cultivated more extensively than other lands, and producing those unequalled breeds of sheep, cattle, and horses, which flourish only in healthy places.

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The real name and address of the writer of a letter must be given in confidence.

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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TO OUR PATRONS, READERS, AND FRIENDS.

The present number brings us to the close of this year's labours. We trust we have redeemed the pledges given at its beginning. For our part, we can honestly say that no exertion has been spared to make our periodical worthy its great and all-important object. Works of rare merit have been consulted, and the cream of their authors has been given. The only regret is, that our labours are not appreciated to the extent we could wish or we humbly consider they ought to be, by an increased sale of our Journal.

We are open to the suggestions of our friends; and any subject that they may deem useful or valuable, by its being sent, shall command our serious consideration.

We might extend this address to some considerable length, but as such addresses are so commonplace we conclude this short one by frankly wishing all—

A HAPPY CHRISTMAS AND A PROSPEROUS NEW YEAR.

THE GLEANER, No. 23.

FUNCTIONS OF THE NERVOUS SYSTEM.

This, the subject of our next series of the Gleaner, is one we consider of great importance, and also one by no means understood by the majority of our readers; consequently it requires no further preface, but merely to state that it is our most earnest desire to furnish such a fund of useful information as may more and more enhance the usefulness of our periodical and extend its circulation.

The main purpose of the nervous system is to serve as the instrument of those *psychical** powers which are altogether peculiar to the animal. Now when we attempt to analyse these attributes, we may resolve them, like the properties of the material body, into different groups. We find that the first excitement of all mental changes, whether these involve the action of the *feelings* or of the *reason*, depends upon *sensations*, which are produced by impressions made upon the nerves of certain parts of the body, and are conveyed by these to a particular ganglionic centre, which is termed the *sensorium*, being the part in which sensation, or the capability of *feeling* external impressions, especially resides. Now there are numerous actions, especially among the lower animals, which seem to be as far removed from the influence of the will, as little directed by intelligence, and hence as truly "automatic" in their nature as the reflex movements themselves, but which, nevertheless, seem to depend upon sensation for their excitement. The movement seems, in some instances, to be immediately consequent upon the production of the sensation: of this kind are the act of sneezing and the sudden start produced by a loud and unexpected sound in ourselves. But in other instances it appears rather to proceed from an internal feeling excited by the sensation, more akin to the emotions of man, which, without any calculation of consequences, any intentional adaptation of means to ends, any exertion of the reason, or any employment of a discriminating will, may produce an ac-

* The term used to designate the *sensorial* and *mental* endowments of animals in its most comprehensive sense.

tion, or train of actions, as directly and obviously adapted to the wellbeing of the individual as we have seen those of the reflex character to be. It is impossible to say, in regard to many of the actions of the lower animals, to what extent they involve feelings or emotions at all analogous to those which *we* experience; and it would seem better to apply the generic term *consensual* to those in which the sensation excites the motor action, either immediately or through the agency of an indiscriminating impulse excited by the sensation. This class will include all the purely instinctive actions of the lower animals, which make up, with the reflex, nearly the whole of the animal functions in many tribes, and which are peculiarly elaborate in their character and wonderful in their results in the class of insects. It is obvious that such actions, not being the result of any intelligent choice or voluntary direction on the part of the animals which perform them, are no less truly automatic than those belonging to the reflex group; the only essential difference being that the latter are performed without the necessary participation of sensation, the excitement of which appears to be essential to the performance of the latter. The automatic movements are found to be gradually brought under the control of the intelligence and will as we rise towards man, in whom those faculties are more strongly developed, so as to keep the *consensual*, as well as the reflex actions in subordination to the more elevated purposes of his existence. There are many sensations, however, which do not thus immediately give rise to muscular movements; their operation being rather that of stimulating to action the intellectual powers. There can be little doubt that *all* mental processes are dependent, in the first instance, upon sensations, which serve to the mind the same kind of purpose, that food and air fulfil in the economy of the body. If we could imagine a being to come into the world with its mental faculties fully prepared for action, but destitute of any power of receiving sensations, these faculties would never be aroused from the condition in which they are in profound sleep, and the being must remain in a state of complete unconsciousness, because there is nothing of which it can be made sensible; no kind of idea which can be aroused within it. But after the mind has once been in active operation, the destruction of all *future* power of receiving sensations would not reduce it again to the inactive condition; for sensations and ideas are so stored up in the mind by the power of memory, that it can (so to speak) feed upon the *past*. Now, the ideas which are excited by sensations, if associated with feelings of pleasure or pain, constitute those emotions or moving powers of the mind which are, either directly or indirectly, the springs of a great part of our actions. When strongly excited, the emotions may produce movements which are purely involuntary, and which the will may not be able to restrain; but in their normal exercise they act in subordination to the reasoning processes, and their operations upon the movements of the body is through the medium of volition.

It is, indeed, the peculiar character of voluntary movement, that it is the result of the exercise of the reasoning powers being the expression of a *definite* purpose, of a designed adaptation of means to ends, on the part of the individual performing it, instead of proceeding from a mere blind, indiscriminating impulse such as that which is the mainspring of the instinctive and emotional actions.

It is in man that we find the highest development of the reasoning faculties; but it is quite absurd to limit them to him as some have done: since no impartial observer can doubt that many of the lower animals can execute reasoning processes, as complete in their way as those of man, though much more limited in their scope.

(To be continued.)

THE CASE OF MR. HODGKISS,

OUR AGENT FOR WALSALL AND NEIGHBOURHOOD.

We have, according to request, inserted in our Journal all the proceedings in this case, and will leave our readers to make their own comments, which doubtless will agree with our opinion; namely, that there was not the least foundation to base such proceedings upon; and it is

only another proof of the animus and malignity of the imbecile professors of the allopathic doctrine engaged in them.

Extracts from the Walsall Free Press.

SUDDEN DEATH OF A WOMAN AFTER TAKING MEDICINE.—An inquest was held lately at the Rycroft Tavern, Rycroft Hill, in the parish of Rushall, by G. H. Hinchliffe, Esq., Coroner, on the body of Emma Tonks, 22 years of age, a married woman. The husband of deceased, a collier, stated that she had been unwell for the last month. She retired to bed on the night of the 18th instant. About four o'clock in the morning she roused him for the purpose of giving her some medicine, which she had obtained from W. Hodgkiss, a medical botanist in Stafford Street, Walsall, and on his rising, at half-past six o'clock the same morning, to go to his work, he discovered she was dead by his side, but still warm. No surgeon was called in either before or after death. A *post-mortem* examination was made on the 21st instant, by A. Fletcher, Esq., of Walsall; but the inquest was adjourned until Monday next, for the purpose of having the mixture analysed. Mr. W. Price, Inspector of Police at Rushall, found three bottles containing the mixture, and a paper parcel, all of which had been sold to her by Hodgkiss, and a part of which she had been taking medicinally about a week. Mr. Ebsworth, of the firm of Duignan and Ebsworth, solicitors, of Walsall, attended the inquest to watch the case for the person who supplied the mixtures.

SUDDEN DEATH OF A WOMAN AFTER TAKING MEDICINE.—G. H. Hinchliffe, Esq., Coroner, held an adjourned inquest upon the body of Emma Tonks, of whose death a notice appeared in our last impression. The only witness examined at the adjourned inquest was A. A. Fletcher, Esq., surgeon, who stated that he had made a *post-mortem* examination of the body of the deceased on Tuesday, the 25th inst., and had found the head turgid, and the face swelled and slightly flushed; but with these exceptions, there were no other external appearances of an unusual kind. On opening the head he found the dura mater and its membranes, the pia mater and its membranes, and the blood-vessels of the brain, to be much congested, and their general appearance that of a person who had died of congestion or apoplexy. The cerebellum and the brain itself were, however, both healthy; and when the latter was cut into thin slices, presented fewer bloody points than usual. The ventricles were also healthy, and contained only a few drops of serum. On examining the viscera of the chest and abdomen, he found the pleura much distended, and containing from two to three pints of water. The lungs, which bore traces of old disease, and were much condensed, were found to be in an active state of inflammation, which had continued up to the time of death. The heart was healthy and of a natural size, but its ventricles were gorged with dark, coagulated blood. The liver, which was much enlarged, had the appearance of the liver of a person who had died from drinking ardent spirits. The stomach presented a deep inflammatory blush externally, while internally the whole of the coats were much inflamed, and the mucous membrane so much so as to be almost in a state of ulceration. This appearance extended to the other viscera of the abdomen, with the exception of the kidneys and the colon, which were healthy and normal in their appearance. The stomach contained a quantity of green fluid which corresponded in appearance with a fluid in a bottle given to him by Inspector Price, and some of which was said to have been administered to deceased. The appearances of the stomach were such as could only be accounted for by the administration of some acrid poison, and therefore, although there could be no doubt deceased had died from hydrothorax, or dropsy of the chest, he was not prepared to say that the medicine administered had not accelerated death; but from the suddenness of the death, there was no ground for supposing it had been caused by the drugs administered. In reply to one of the jurymen, Mr. Fletcher said that repeated overdoses of calomel might have produced the appearances found in the stomach; but had they been the result of calomel, they would have been accompanied by other symptoms, such as salivation. Mr. Cooper (one of the jury) was about to make some remarks upon

the conduct of certain parties who had prescribed for the deceased without seeing her, when he was stopped by the Coroner, who reminded him that the present was not the time for expressing his opinion, but for putting what questions he thought proper to the witness under examination. One or two of the jury animadverted upon the notice which had appeared in the papers, of the former portion of the inquest—some saying it was incorrect—others, that it was altogether false; but none pointed out the error, and all were reminded by the Coroner that that was a matter foreign to the inquiry. No further questions having been put to Mr. Fletcher, the Coroner summed up and touched upon the principal points in Mr. Fletcher's evidence. At the close of the Coroner's remarks, Mr. Cooper expressed a desire to have the contents of the stomach analysed; but on being informed by Mr. Fletcher, that analysation of the contents of the stomach could throw no light upon the causes of death, which there could be no doubt were what he had before stated, Mr. Cooper did not press his request; and the jury, without retiring, returned a verdict of "Death from natural causes."

I sent a plain, unvarnished detail of the case to the Editor of the above paper, which, in justice to me he ought to have inserted; but no: he had not enough common honesty or liberality to do so. And here, also, I state that Mr. Fletcher gave in his evidence very clearly, which was owing, I think, to the presence of the solicitor, for he had already promised that I should not go unpunished: but when trying to prejudice the minds of the jury, after his evidence, and the impropriety of me giving a certificate, the solicitor at once stopped it by telling them it was not the business of the meeting; and the Coroner said there was no law to punish me nor prohibit me from practice, except they could bring a charge of manslaughter.

To the Editor of the Botanical Journal.

Dear Sir,—I send you the following particulars of the proceedings which caused so much excitement in this district, respecting the death of a female who died under botanic treatment, and which the doctors thought a very ample opportunity of venting their spleen at the botanic system. The particulars are as follows: On the morning of the 18th November, Emma Tonks was suddenly seized with an attack of spasmodic asthma, and the husband, Mr. Tonks, went into the town to fetch a doctor: the first he called upon was not at home; he went to a Mr. Whimper next, and the assistant, Mr. Cox, supplied him with a powder, which was to be given in two doses, but, through mistake, was administered in one—but would not go to see her. About four o'clock, Mr. Tonks came for me, at the request of his wife. After learning how she was, I refused to go, and advised him to get a doctor, when he related what I have stated above. I went, and took with me some acid tincture of Lobelia, and found her almost suffocated, suffering as a primary cause from hydrothorax. I administered teaspoonful doses of the tincture, till she could breathe a little easier; at six o'clock I left, with instructions how they were to treat her, and to come for some mixture; at nine o'clock, she continued to get easier through the day, but at night had another attack, got out of bed in a profuse perspiration, and sat before the kitchen fire, where, it appears, she took cold, for, after getting into bed again, she complained of great coldness, and in two hours after she was dead. Mr. Tonks then went to the above-named Mr. Cox, to get a certificate for the burial, when he told him he should not give one, because he had not seen her before death. Mr. Tonks then came to me, and I gave him a certificate. Some time during the day, the said Mr. Cox met Mr. Tonks, and asked him if he had given information to the Inspector of Police. He said, "No, he had got a certificate."—"Where did you get it from?" was the eager inquiry, when Mr. Tonks, thoughtlessly, told him from me. Mr. Cox then took him into a public house, and treated him with two pints of ale, and gave him a half-crown, while he solicited all the information from him he could get. The said Mr. Cox then had the impertinence to come to my shop, and ask me questions concerning it, and said, "he should have given calomel and opium

in three-grain doses every ten minutes with a large blister on the chest to draw out the water." (But I think he wanted one on his head to draw the water out of his brains.) He then goes from me, and communicates information to Inspector Price, who goes to Mr. Tonks's house, and demands the medicine and certificate, and gets up an inquest and *post-mortem*. All this is done without my knowledge as to when it was to take place. So, fearing there was something wrong going on, my friends would have a solicitor to watch the case, which I have every reason to believe had a very good effect on the jury, and the doctor too.

W. Hodgkiss.

No. 241, *Stafford-street, Walsall.*

THE EAR.

Every person knows he has an ear, that he hears with it, that it has an opening, and that it produces a kind of wax: so far does the general knowledge of the organ extend, but not one in ten thousand is beyond this acquainted with it. It is, therefore, most important that all should understand not only the structure, functions and conformation of this most delicate and elaborate organ, but be enabled, upon most accidents happening to it, to know and apply the proper means to remedy and obviate such unfortunate occurrences; for the sense of hearing is as precious as that of sight. In fact, one adds intensely to the other, and the loss of either, physically speaking, is one of the greatest misfortunes that can befal an individual; and were we obliged to relinquish either, it would be with the utmost difficulty that we could decide upon which to part with. Thus premising, we begin with a short and concise description of the conformation of the ear, and will endeavour to render it as explicit as a mere description, unaided by drawings, can accomplish. The general form of the external part of the ear needs no description, consequently we pass on to the great cavity of the ear called the *concha*, which is the trumpet-like opening that leads to the tube, which is about three-quarters of an inch in length: this leads into the tympanum or drum of the ear, and is furnished with a set of small glands, which pour their secretion into the tube; which secretion is the cerumen or wax. As to its course, it first passes upward and forward, and then makes a slight curve to descend to the *membrane* of the tympanum.

The tympanum is a very irregular cavity, intermediate betwixt the membrane which is extended across the bottom of the external tube, and the labyrinth, or internal ear. It contains no fluid as the labyrinth does; but is really a cavity having a communication with the external air throngh a tube which leads into the throat. The inner extremity of the external tube forms a circle, which is pretty regular and upon which the membrane of the tympanum is extended. That part of the cavity of the tympanum which is opposite the termination of the external tube is very irregular; it has in it the foramen rotundum and the foramen ovale, the latter leading into the vestibule, or central cavity of the labyrinth, and the former into another part to be described. The eustachian tube extends forward from the cavity of the tympanum and opens behind the palate into the throat, and doubtless is designed for admitting the free access of air into the cavity of the tympanum.

The membrane of the tympanum is extended over the circular opening of the bottom of the external tube. It has a little of an oval shape, and lies over somewhat obliquely, so that its lower margin is further inward than the upper. Its use is to convey the vibration of the atmosphere, collected by the outer ear, inwards to the chain of bones in the tympanum. Although this membrane be tense, it is not stretched uniformly, like the parchment of a drum, but is drawn into a funnel-like shape by the adhesion of the long neck of the malleus to its centre. It consists of two layers of membrane, and has naturally no perforation in it; and the experiments of air and the smoke of tobacco sent from the mouth through the ear succeed only in those who have had the membrane of the tympanum partially ruptured or eroded by ulceration. This membrane is transparent; and when we look into the tube of the ear and direct a strong light into it, we observe it to be of a shining, tendinous appearance.

The vibrations of the membrane of the tympanum are transmitted to the foramen ovale by four small moveable bones, called the malleus, incus, orbiculare and stapes; named from their shape, in English, thus: the mallet, the anvil, the globe and the stirrup. They are so united by articulation and small ligaments as to form an uninterrupted chain, and while they transmit their vibrations, their mechanism is such that they strengthen the impulse. They have also small muscles attached to them.

The labyrinth is the internal ear, the proper seat of the sense of hearing. It consists of a vestibule or middle cavity, of the semicircular canals, and of the cochlea. It has its name from those cavities and tubes, leading into each other in so intricate a manner as to be followed out with much difficulty. We understand that the cavities hitherto described in the human ear contain air and communicate with the atmosphere; but in the cavities we have now to describe the nerve is expanded, and there is in contact with it not air but an aqueous fluid.

The vestibule, or central cavity of the labyrinth, is of an oval form.

There are three semicircular canals opening into it.

The third division of the labyrinth is the cochlea, named from its resemblance to the shell of a snail.

Within the vestibule, semicircular canals, and cochlea, there are soft membranes. These form sacculi and tubes which contain a fluid, and have the extreme branches of a nerve distributed among them. Betwixt the soft sacculi and tubes and a pair of the osseous labyrinth a watery fluid is exuded. All these parts are supplied with nerves uniting with the auditory nerve, which conveys the sensation to the brain.

Of Hearing in general.—The external ear collects the vibrations of sound as it moves in the atmosphere with circular undulation from the sounding body. From the external ear the trumpet-like tube conveys the sound inward to the membrane of the tympanum. In the tympanum the operation of the chain of bones is, to increase the vibration received upon the membrane of the tympanum, and to transmit it through the foramen ovale, the foramen rotundum, and conveys a double motion through the cochlea.

There is no air in the labyrinth, but only an aqueous fluid which conveys a stronger impulse than the atmosphere; thus the sound is conveyed through the ear, and taken up by the auditory nerve to the brain.

From our description it may be plainly seen, that an organ so beautifully, elaborately, and delicately formed, ought, when in a diseased state, to be dealt with in the tenderest and most careful manner: no forcible means ought to be used upon any consideration in using the necessary applications and conducting the required operations upon so delicate an organ: nor can the practice of syringing the ear, when forcibly done (which is always the case when in unskilled hands), be too highly reprehended. Neither should any oil or other fluid be dropped into the ear, because, in the former case, the action of the syringe is too powerful, and in the latter, the oil will necessarily sink, and an accumulation of it take place against the membrane of the tympanum and prevent its vibration, making the patient deafer than before. If it is necessary to use a syringe, let it be with all possible gentleness; and if any oleaginous fluid be required, let a small piece of cotton wool be immersed in the fluid, then nipped out, and the cotton wool, thus delicately charged with the oil or fluid, carefully inserted in the ear: this is all that ought to be done.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart

UVA URSI

Greenwood *Delt.*

indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

BEARBERRY (UVA URSI)

Is our illustration for this number.

DESCRIPTION.—A beautiful little evergreen shrub, long, trailing branches, obtuse, rigid, glossy leaves, and terminal clusters of rose-coloured flowers.

PLACE.—Stony, barren, alpine heaths in the north of England, and in Scotland and Ireland.

TIME.—It flowers in May, and the bright red berries remain through the winter.

QUALITIES.—It is an astringent, and mild diuretic, and stands recommended as a useful medicine in calculous and nephritic diseases.

The dose is from twenty grains to one drachm of the powdered leaves, or from two to four tablespoonfuls of a strong decoction.

MEDICAL EDUCATION.

(Continued from page 68.)

DURING the ten years ending in December, 1856, 3037 persons received licenses to practise as apothecaries, either from the London or from the Dublin Company. All these persons were compelled, by Act of Parliament, to produce evidence of a five years' apprenticeship. The premium paid by each apprentice *averages*, probably, £150. He gives this sum, and his labour, as soon as he is imperfectly initiated, as a dispenser of the drugs which his master may prescribe for his patients. In return, he receives board and lodging, and has such opportunities of acquiring the rudiments of his profession as his master's "surgery" may afford. The practical knowledge of pharmacy which he obtains is highly important and useful, but it is only practical—rarely, if ever, scientific; and even the practical kind is very limited, in comparison with that obtainable during six months in a large druggist's shop, in which the number and variety of drugs far exceed those of a general practitioner's dispensary. The absurdity and loss of time of the apprenticeship system is felt so strongly, that the Act of Parliament enforcing it is evaded. A contract is usually made, by which, after the young man has been a dispensary drudge for two or three years, he is at liberty, during the remainder of his term, to attend the professional lectures and hospital practice necessary to qualify him to become a candidate for examination by the Apothecaries' Company and College of Surgeons. The examiners of the Apothecaries' Company are aware that this method of evasion is pursued, and fully recognise it. The payment of the large premium needlessly augments the cost of medical education; the youth is taken from a provincial school when he is fifteen or sixteen years old, having scarcely any general information, and knowing but little Latin, and less Greek, to spend those precious years, which ought to be devoted to the general culture of his mind, in learning what might be acquired in a few months; while the system of evasion which is resorted to, in order to lessen the loss of time and money which an honest conformity to the Act of Parliament involves, is humiliating to all the parties concerned. The extent of the injury which the apprenticeship system inflicts is depicted in the following evidence of Mr. Green, one of the Examiners of the London College of Surgeons, and a teacher of surgery for upwards of thirty years:—

"If you take, as it has frequently been my lot to see, a young man who has come from an apprenticeship of five years, and compare him with one who has been at the university, who has merely taken his first degree in medicine, both of them young men, and nearly of the same age,

you will find that it is with the greatest difficulty that the one who has been apprenticed, in the ordinary way, to a country practitioner, acquires information; he has no power of observing and generalising—in many instances he cannot spell, and cannot put down his thoughts in writing—in short, he evidences in every way great imperfection of mental development; whilst the young man who has come from the university gains more, perhaps, in a couple of years, than the other would if he were at the hospital for ten years." From personal knowledge we can confirm the truth of this statement.

The fees payable as a condition of obtaining the certificates of attendance on lectures and hospital practice necessary to render a student eligible for examination by the London College of Surgeons or by the London Apothecaries' Company, vary at the different medical schools; but in London they range, we believe, from £70 to £100. As the student has to make a separate payment for the "subjects," or parts of the "subjects" which he may dissect, and necessarily incurs other incidental expenses not included under the head of fees, and as he must possess a few books to aid him in his studies, we shall not be far wrong in estimating the

Cost of professional instruction at .	£100	0	0
Cost of diploma of London College of Surgeons	23	2	0
Cost of diploma of London Apothecaries' Company	10	10	0
Aprenticeship premium (say) . .	150	0	0
Total fees payable to become a general practitioner	£283	12	0

The College of Surgeons examines only in anatomy, physiology, and surgery; and although the Apothecaries' Company examines in chemistry, botany, materia medica, and the practice of medicine, it is legally debarred from the domain of surgery, so that to become a properly qualified "general practitioner," a man must pass both examinations and pay for both diplomas. Candidates for the membership of the College of Surgeons must have been professional students four years. Candidates for membership of the Apothecaries' Company must have been professional students five years, but by systematically evading the Act of Parliament the Company allows the years of apprenticeship to count. If we assume that the apprentice passes two years in the house of his master, and the three following years elsewhere as an attendant on lectures and hospital practice, that his clothes and miscellanea cost him £25 a year, and that during the last three years of his studentship his board and lodging cost him £75 a year, the total expenditure during his five years of study would be as follows:—

Fees for lectures, hospital practice, and diplomas as above	£283	12	0
Clothes and miscellanea for five years	125	0	0
Board and lodging for three years .	225	0	0
	£633	12	0

It thus appears that by subjecting a youth sixteen years old to the educational processes ordered in the conjoint prescription of the London College of Surgeons and Apothecaries' Company, a duly qualified general practitioner may be produced in five years at the cost, using round numbers, of £650. We know that the process may be gone through for a less sum, and that very often a much larger one is expended. Of course the highest class of medical men, who receive a first-rate preliminary education, who visit the Continental schools, and who, if they join the London College of Physicians, pay £56 : 10 for their license, in addition to the cost of their university diploma, must disburse a much larger sum; but we believe £650 is a fair approximation to the amount usually spent by the better class of frugal and industrious young men in qualifying themselves as "general practitioners," by the method enjoined upon them by the College of Surgeons and Apothecaries' Company, in the exercise of the authority given to them by the State. Now, viewing these facts, the medico-political economist is prompted to ask whether an education equal to that usually possessed by the general practitioner is not obtainable for a smaller expenditure of time and money? Or in other words, whether an equal amount of time and money could not be so expended as to effect an education far superior to the one in question. We venture to answer both these questions in the affirmative.

We have already shown the baneful result of the apprenticeship system. No additional arguments are needed to prove that if the first two years of the five were devoted to the acquisition of a sound general education, the student would be enabled to make far better use of his time and opportunities during the last three years of his studentship than he does or can now. However idly the first half of the five years may be spent, the diplomas obtained every week show that during the last two summers and three winters men can easily qualify themselves to become general practitioners, even by the cumbrous system now in force. Therefore, if the law enjoining apprenticeship were abolished, and if the student who now spends two and a half years as an apprentice, were instead to spend two years of that time in acquiring a sound preliminary education (a practical knowledge of pharmacy being obtained in the six months immediately afterwards), he would, at the end of the five years, not only be far superior in general education to the average of general practitioners, but the intellectual discipline and enlarged views ensured by his general education would enable him to prosecute his professional studies with a rapidity, thoroughness, and success which are denied to the man destitute of preliminary education, and which would issue in the possession of far more accurate knowledge, more decisive skill, and more trustworthy judgment, than characterise the general practitioner as at present educated. It is equally clear that if the apprenticeship law were abolished, such students as might not choose to incur the expense of giving themselves the preliminary education above mentioned, could, besides devoting six months exclusively to practical pharmacy, attend all the lectures and hospital practice required by existing regulations in three years; thus completing their professional education within that time, and lessening the cost of it by two years and £200. Thus it appears, that were it not for State interference, in the form of the apprenticeship law, the middle classes could be supplied with medical men far superior to those who now attend them, at a price no higher than that now paid, and that the poorer classes could be supplied with medical men, having an education equal to the present general practitioner, at little more than two-thirds of the sum now paid for it. The wrong suffered by both the profession and the public through this apprenticeship system would have been remedied long ago if the medical body had been left to legislate for itself.

But there is another characteristic of the present educational system far more injurious than that of apprenticeship, and equally maintained by the authority of the State, viz., the certificate system. We have already explained how this system was made available to secure the monopoly of teaching, and of the consequent fees, in the hands of the London hospital surgeons; the more liberal administration of the system of late years justifies us in believing that it is maintained, partly at least, from a conviction that its beneficial effects upon medical education outweigh the objections to it. But our readers must judge. Each winter session of medical study is six months long; each summer session is three months long; and as the period during which candidates for membership of the Royal College of Surgeons or of the Apothecaries' Company are required to attend lectures and hospital practice extends over three winter sessions and two summer sessions, the aggregate time so occupied is exactly two years. Within this period candidates for membership of the Apothecaries' Company obtain certificates from various professors or professional lecturers recognised by the company, that they have attended fifteen courses of lectures. Most of the courses consist of three lectures a week during the whole of each session. Some courses, as of anatomy, occasionally consist of a lecture each day. Adding the winter and summer courses together, we estimate that the average number of lectures in each course is 65, and that the whole number of lectures certified as attended is 975. Besides attending these lectures, the student is expected to dissect during one winter, and must produce certificates that he has diligently attended the *medical* practice of an hospital during eighteen months. To make such attendance at

an hospital fairly profitable, it should occupy at least two hours a day. A special order of succession in which the lectures are to be attended is strictly insisted on by the Apothecaries' Company. Of course many of the certificates required by the College of Surgeons are the same as those required by the Apothecaries' Company; but the college requires the candidate to produce certificates of having attended an additional course on anatomy, two on the principles of surgery, and one on clinical surgery, the three courses comprising about 316 lectures; and of having attended the hospital practice of surgery during twenty-four months. So that besides dissecting, and attending during eighteen months on the medical practice, and twenty-four months on the surgical practice of an hospital, the embryo general practitioner must produce certificates of having attended about 1300 lectures, each of which is an hour long! The simple statement of these facts seems to us a *reductio ad absurdum* of the whole system of medical education as now pursued. The result is obvious: the lectures are neglected; and as both surgeons and physicians visit the hospitals at the same hour, the most diligent students are obliged to neglect medical practice if they attend the surgical and *vice versâ*, or to run in a confused way from one to the other, thus attending neither efficiently. Many young men who begin their studies in earnest become perplexed and discouraged by the multiplicity of claims simultaneously made upon them, and at length lapse into indifference as to either lectures or hospital practice, provided only they can obtain the requisite certificates. They therefore content themselves with appearing at the lectures and at the hospitals just so often as is needful to prevent them from seeming entire strangers to the lecturers or to the physicians and surgeons of the hospital which they attend. How far the bewilderment caused by these regulations co-operates with the temptations of the metropolis to start young men in the career of profligacy which is popularly supposed to distinguish medical students, it is impossible to say, but its influence in this direction is undoubtedly great.

Vain attempts are made at some schools to enforce attendance on lectures by withholding the certificates from such students as do not comply with the regulations laid down: attendants on the lectures at St. George's Hospital are expected to attest their presence in the lecture-room by signing their names at the *conclusion* of the lecture, whenever the lecturer may suddenly call upon them to do so. The chief result is, that each lecture is interrupted throughout by the entrance of students, almost every minute of the hour, their main object being to be present at the end, when they may be called upon to give their autographs to the lecturer. The punctual and attentive listeners to the lecture are still more effectually prevented from concentrating their attention upon it by the attempt to enforce discipline which distinguishes King's College. There the porter puts a mark against the name of each student who enters the room *before* the professor begins his lecture. The presence of the idlers being thus enforced, they seat themselves on the backmost benches, and occupy the time of the lecture in playing all the games possible to inventive geniuses under such circumstances. The authority of such professors as Dr. Budd and Mr. Fergusson to maintain silence is powerless. We have often seen them compelled to stop in the middle of a sentence until the uproar subsided. The injustice of such a system to the real student is surely sufficiently evident. But lecturers themselves are so sensible that students are overlectured that, however numerous may be a student's sins of omission, cases are extremely rare in which he is punished by depriving him of his certificate. As when laws are cruel, juries perjure themselves rather than convict, so lecturers, as well as hospital physicians and surgeons, conscious of the unreasonable demands made on students, furnish them with certificates of having "diligently attended" the needful lectures and hospital practice, without making inconvenient inquiries whether such certificates are justified. Mr. Guthrie, in his evidence, says, "I know too well that from various parts, certificates, diplomas, and all other papers come very improperly sometimes," and that, "they are often very deceptive." . . . . "I do not hesitate to say that

amongst those attending my surgical lectures, I have at this moment three or four, who have paid me their money, whom I have never seen; and when last season I called their names over, I found them absent. They had paid their money and walked off to the country, and had relied upon my never discovering the fact; and at the end of the season they would have come to me and asked for a certificate, and probably they would have got it. I was once (?) deceived in that way, and gave a false certificate." The College of Surgeons, in 1834, called upon teachers to be more discriminating in giving their certificates; "but," says Mr. Guthrie, "I do not believe that they have given themselves any trouble about it, either students or teachers; and, in fact, it is not their interest so to do, unless the rule is general." Mr. Green affirms that students are likely to abandon any school where regular attendance on lectures is enforced. That this certificate system must generate loose notions of moral obligation in both teachers and pupils there can, we think, be little doubt. We heard a young man ask for a certificate of having attended a course of lectures, not one of which he had been present at. The lecturer began to fill up the certificate, but before completing his signature he said to the student, "Have I ever seen your face before?" After considerable equivocation, the student admitted that he had not attended more than one lecture. The lecturer then said, that on receiving evidence of his attendance on a single lecture, he would sign the certificate of his having attended the course! The student finally admitted that he had not attended one lecture, and that he did not even know in which quarter of the year the course was given. But he pleaded illness as an excuse for non-attendance, and having paid his hospital fees, he persisted in trying to convince the physician that if he refused the certificate, he would not only be guilty of a great unkindness, but a great *injustice!* He evidently considered that in paying his fees he had bought the certificate, and that the lectures were given into the bargain, to be attended or refused at his option. Another authentic instance, even more ludicrous, and equally illustrative of the value of certificates, has just been communicated to us by the physician to whom it occurred. A certain student declared that he had attended the clinical lectures of Dr. A., who accordingly gave him a certificate to that effect. Some time afterwards, requiring a like certificate from another physician of the same hospital, Dr. B., he actually went again to Dr. A., and asked him for a certificate of having attended his lectures supposing him to be Dr. B. Whether, in fact, he had never seen either of the lecturers in the lecture-theatre, or whether his memory played him false, we leave our readers to determine.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 72.)

CHARGE a small glass retort with strong muriatic acid, and insert its beak into a tubulated receiver containing a little water; then into this receiver insert two small thermometers, the one immersed in the water, the other suspended above it. By applying the heat of a lamp to the retort, muriatic acid gas will be disengaged in abundance; and if the thermometers be examined, that which is suspended in the gas will be found to have risen only a few degrees, while that which was immersed in the cold water has acquired a boiling heat.

Take a glass of cold water, pour a little sulphuric ether upon its surface, and inflame it by a slip of lighted paper. The ether will burn for a considerable time, and produce a large volume of flame, but when it is extinguished, the water will be found not to have increased in temperature. The design of this experiment is to show that water is a bad conductor of caloric, and that when we wish to heat water, the heat ought not to be applied at its surface.

Dip the bulb of a thermometer in melted rosin, so as to coat the glass with it, and suffer it to cool completely. If the flame of a taper be now applied to the bulb, so as to melt the rosin, the mercury in the thermometer will not rise at the approach of the taper, but will actually be

seen to contract as the rosin becomes liquid.

Put into a wine-glass about a scruple of oxidized manganese and nitrate of potash, and an equal quantity of the same compound into another glass. On one pour hot, and on the other cold water. The hot solution will exhibit a beautiful green colour: the cold one, a deep purple.

If a small portion of the same compound be put into several glasses, and water at different temperatures be poured upon each, the contents of each glass will exhibit a different shade of colour. This experiment affords another instance of metals producing various colours according to their different modes of treatment.

If a flat piece of iron be hammered briskly on an anvil, its temperature will soon be so increased, that a piece of phosphorus laid upon it would instantly be inflamed. This experiment is designed to show that caloric may be evolved merely by percussion; and that, when evolved, it is as active and energetic as though it had never been latent.

In two or three wine-glasses, each containing some distilled water, dissolve a little newly-prepared *white* prussiate of iron, and exclude the action of the air by covering the contents of each with a thin layer of oil. If these colourless liquids be now exposed to different degrees of cold, it will be perceived that whenever the water in either of them freezes, the white precipitate will become blue.

(To be continued.)

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Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

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For further descriptions see the eighth vol. of our Journal, page 168.

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COFFIN'S
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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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OUR NEW YEAR'S ADDRESS.

The year, to the agents and practitioners of Dr. Coffin's long, well-tried, and supremely successful system of Medical Botany, the important year 1859, has just commenced, and with it the operation of that most iniquitous Act, the new medical Gagging Bill. Now, indeed, may the host of professional quacks and advertising impostors, who have been in the practice of their nefarious, deleterious impositions upon the credulity and fears of their ignorant patients, or rather victims, exult in their having obtained their, to them, invaluable diplomas; which will sanction their morally illegal acts, and enable them to retain their practice. And all those who apply to them are not only made the dupes of their own ignorance, but the victims of the unhallowed atrocities of those disgraces to society and the profession.

Instances of another kind are daily happening, viz., the sufferings of a vast many who bow to their senseless idol *respectability*. "We will go," say they, "to Mr. — or Dr. — he is a highly respectable man, he keeps his carriage and stands high in the profession." The consequence is, that they are most respectably bled, leeched or blistered, or possibly all three; then drugged with the poisonous calomel; afterwards sent into a stertorous sleep with opium; and alas! too often is it the case, that through this system of depletory, poisoning practice, they die respectably, a respectable certificate is given, they are respectably buried, the doctor gets respectably paid, and thus ends the matter, and the only consolation to the weeping friends and survivors is, that it was all done respectably. Now if parties are determined to be thus respectably treated and frequently killed, what business is it of ours? it may be asked; to which we reply, that it is the business of every right-minded man who has really the good of his kind at heart, to point out the errors that are daily committed; to warn them of the shoals they may be stranded on, and the rocks upon which they may strike and be irremediably destroyed; and though the majority of those who do this, gain small thanks for their exertions to benefit their fellow creatures, yet, they have the pleasing satisfaction of having done their duty, and no reproaches of conscience to disturb or harass their minds; and if the good they do is not at present appreciated, still it will some time or other be acknowledged.

By this superlatively restrictive Bill, the faculty have indeed hedged themselves within the pale of respectability, and, indeed, can go on with their own magnificent system with impunity—a system even admitted to be full of rottenness and without foundation, by one of their most eminent men. They can now mercurialise, opiumise, and even flog,* to their hearts' content; and should their patients die under the infliction, a certificate of death settles all lawfully. An M.D., for the honour of their cause, can be easily procured to state in a court of justice, that such treatment is perfectly

* See the case of Mr. Strafford, M.P., page 135 vol. viii, of our Journal.

right, though very strong.* Dr. COFFIN'S agents and practitioners are not recognised, forsooth, as respectable: they ride in no carriage (therefore their patients are at any rate not charged for horse-flesh); but when the cries of suffering humanity reach their ears, promptly foot it; hasten to relieve, and what is more than can be said of many of the faculty, do relieve and cure, even when the allopathic practitioners signally fail. But, on the other hand, if it be respectable assiduously to wait upon the sick, to use such medicines as act in accordance with nature, assisting instead of retarding and annihilating her exertions to throw off the disease, and to cure speedily without prolonging the disease in order to swell a bill, then is Dr. COFFIN and his agents most truly respectable in the proper and full meaning of the term; and the patients thus benefited will thankfully and joyously give them their money even as an act of gratitude.

We now give the clauses of the Bill that appear to militate against our honourable avocation, and commence with clause 32nd, the substance of which is, that "none but registered persons can recover charges." This leaves us only where we were before.

40th clause.—"Any person who shall wilfully and falsely use or take any medical title without being duly registered, shall forfeit the sum of £20."

This clause prevents a great number of parties, who were considered qualified, from practising, and even some of those who are practising Dr. COFFIN'S system of Medical Botany, assuming to be M.D.'s under the false diploma of a *reformed Medical College* of New York.

55th clause.—Chemists and druggists are allowed to sell, and duly licensed apothecaries to sell, compound or dispense medicines.

In conclusion, we leave our agents and practitioners to ponder over these clauses; and any further information they may desire, we will gladly impart.

It requires more magnanimity to give up what is wrong than to maintain what is right, for our pride is wounded by the one effort, and flattered by the other.

* See also the evidence of Dr. Marsh, page 137 of the same volume.

THE GLEANER, No. 24.

FUNCTIONS OF THE NERVOUS SYSTEM.

THUS, then, we have to consider the nervous system under three heads:—*first*, as the instrument of the reflex actions; *second*, as the instrument of the consensual and instinctive actions; *third*, as the instrument of the intellectual processes and of voluntary movements. Now there is good reason to believe that to each of these groups of actions a particular portion of the nervous centres; one ganglion or series of ganglia being limited in function to the reception of simple *impressions*, and to the origination of reflex movements consequent thereon; while others are set apart for the reception of impressions of which the mind becomes conscious as *sensations*, and for the origination of the consensual movements these excite; whilst a third, which is superadded to the foregoing in vertebrated animals, receiving from the proper sensorium the sensations which have been there called up, is the instrument through which these sensations call ideas into existence, by which these ideas are employed in the various processes of *intellection*, and by which the voluntary determination is brought to bear upon the muscular apparatus. But we shall find reason to believe, that, just as this cerebral ganglion is called into action through the sensory portion of the automatic apparatus, so does it react through the motor portion of the same apparatus; and that it has no more direct connection with the muscular system than it has with the organs of sense.

What has been hitherto said refers exclusively to that division of the nervous system which is concerned in the reception of impressions, the production of sensations, and the stimulation of muscles to contraction; and as these are all purely animal functions, it has been called the *nervous system of animal life*. There is another set of ganglia and nerves, however, which constitute what is called the *sympathetic* or visceral system: this is distributed to the various parts of the nutritive and secretory apparatus, its fibres forming a plexus upon the walls of the blood-vessels, and being distributed with them to all parts of the body; and hence it is called the *nervous system of organic life*. We have seen reason to believe, however, that the functions of nutrition and secretion are not

themseves dependent upon nervous agency, and the relation of the sympathetic system to them, therefore, can scarcely be so intimate as that designation would seem to imply. Probably it is the vehicle for the involuntary action of the emotions upon those functions; and it may perhaps serve also to harmonise them with each other. When we contrast the actions of man and of the higher vertebrata with those of the lower, we cannot but perceive that we gradually lose the indications of *intelligence* and *will*, as the sources of the movements of the animal; whilst we see a corresponding predominance of those which are commonly called *instinctive*, and which are performed, as it would appear, in immediate respondence to certain sensations, without any *intentional* adaptation of means to ends on the part of the individual, although such adaptiveness doubtless exist in the actions themselves, being a consequence of the original constitution of the nervous system of each animal performing them. It cannot be doubted by any person who has attentively studied the character of the lower animals, that many of them possess psychical endowments corresponding with those we term the intellectual powers and moral feelings in man; but in proportion as these are undeveloped, in that proportion is the animal under the dominion of those instinctive impulses, which, so far as its own consciousness is concerned, may be designated as blind and aimless, but which are ordained by the Creator for its protection from danger and the supply of its natural wants. The same may be said of the human infant, or of the idiot, in whom the reasoning powers are undeveloped. Instinctive actions may in general be distinguished from those which are the result of voluntary power, guided by reason, chiefly by the two following characters:—first, although in many cases experience is required to give the will command over the muscles concerned in its operations, no experience or education is required, in order that the different actions which result from instinctive impulse may follow one another with unerring precision. Secondly, these actions are always performed by the same species of animal, nearly if not exactly in the same manner, presenting no such variation in the means adapted to the object in view, and admitting of no such improvement in the progress of life, or in the succession of ages, as we observe in the habits of individual men, or in the manners and customs of nations, that are adapted to the attainment of any particular ends, by those voluntary efforts which are guided by reason.

The fact, too, that these instinctive actions are often seen to be performed under circumstances rendering them nugatory, as reason informs us, for the ends which they are to accomplish (as when the domesticated beaver builds a dam across its apartment, or when the bee tries to produce a queen from drone larvæ), is an additional proof that such actions are prompted, like the reflex and consensual movements, by an impulse which immediately results from a particular impression or sensation, and not by anticipation of the effect which the action will produce. And so far as can be determined by the foregoing tests, we find the comparative predominance of the instinctive actions and the intelligent to be in close accordance with the relative development of the cranio-spinal axis and the cerebrum.

(To be continued.)

CORONER'S VERDICT OF MANSLAUGHTER UPON A SURGEON.

We redeem the promise given by us at page 3 of the 271st number of our Journal, by laying before our readers the result of the proceedings in reference to the *sober*, *steady*, *skilful*, *supremely careful* surgeon, Mr. MacHugh, in the case of Martha Davis; the only reality being the death of the poor woman. Soon after MacHugh's committal he was bailed out, the disinterment, the inquest, the verdict, the committal, &c., being altogether a farce; and upon his approaching the village, the silly, ignorant people took the horse out of the gig in which he rode, and drew him in triumph, firing cannon, &c. When the trial should have taken place, the enlightened grand jury ignored the bill, or, in other words, found no bill. Thus ended the matter.

A Coffinite.

Truly "the people rejoice in that which should give them sorrow."

Taking all the circumstances of the case into consideration, it really appears incredible that such should happen in the nineteenth century, though surprise will in some measure cease when some facts detailed in our correspondent's letter are placed before our readers.

Among the colliery-owners there are honourable exceptions to the following details; but many, to their shame be it stated, practise fraud under the plea of finding their workmen a surgeon in cases of accident, &c. They are generally by no means fitted to judge of the merits of a medical man; consequently, the appointment is very frequently given to a very incompetent person as a sinecure, the work, *such as it is*, frequently being performed by some inexperienced youth at a very small salary.

In most cases, the colliers themselves like neither the principal or his proxy; and this accounts for their employing any surgeon who may happen to reside in the vicinity, even if he should be a notorious drunkard. In proof of this we give a case of a colliery-owner's charity—a concern where the salary for surgeon is said to be £300 per year. £200 are given as a charitable sinecure to a widow; the remaining £100 to a proxy, who is supposed to do the work. This we should not so much cavil at, as the principal of the concern has a right to do what he pleases with the money he considers his own; but, when we find that a sum each pay-day is regularly deducted from the hard-earned wages of the colliers to supply the fund, it most materially alters the case. The colliery-owner has no right thus fraudulently to dispose of the money; and, much as we abhor saying anything derogatory to the gentler sex, we must say that such a participation in the vile conduct of the owner, as the acceptation of the money (however profitable it may be the lady to herself), marks a degraded and selfish mind, little caring for the sufferings of others while she is living in affluence upon money wrung and extorted from those who can so ill spare it. We give a case which is the natural result of such a system. The wife of a workman was taken with a violent bleeding from the nose and mouth on the 28th of last November. The surgeon, who lived two and a half miles off, was sent for, who, on account of its being Sunday, refused to go, but sent some medicine (which did no good) and promised to see the patient on Monday morning; Monday night came, but no surgeon, and when it was demanded why he did not go, he said he had nothing for doing it. Another surgeon was then sent for, who, upon seeing the woman, declared it was too late to do anything; though the woman lived until the Friday, and bleeding all the time. Yet these, and such as these, are the men who would be thought the conservators of public health, and preside over the health of great numbers! We fearlessly assert that there is not one of Dr. COFFIN'S agents in all the country but would have flown to the woman and saved her life. This and the case of Mrs. Davis certainly cannot be called actual murder; but we would like to have it clearly defined how far it is off. We would say to all such colliery-owners as before alluded to, Give up the nefarious practice of extorting money from the workmen; let them have it and employ whom they please; which would not be a worthless proxy who calls £100 per year nothing, or a drunken surgeon who is too inebriated to perform his duties. The present custom calls aloud for thorough reform, and shows the absolute necessity for the promulgation of that system of medico-botanic theory and practice, throughout the length and breadth of the land, first brought into England by that justly eminent medical reformer, Dr. COFFIN.

CURE OF DISEASE OF THE LUNGS.

TO DR. COFFIN.

SIR,—Having suffered for three years with an affection of the lungs and spitting of blood, during which time I was under treatment at various hospitals, and was considered incurable—being in the third stage of consumption, and unable to attend to my daily duties—by the advice of a patient of yours, I was induced to place myself under your care, and I am thankful to say, that for the last twelve months, I have performed my daily duties without being laid by from

my old complaint, and will give you my address in full, with the privilege of using my name, as I am anxious to bear testimony to the benefit I have received from your valuable treatment, that others suffering from the same complaint, may receive the relief I have experienced.

Thankful for your kind attention to my case at all times,

I am, Sir,

Your obedient servant, J. PETTROY.

9, *Waterloo-terrace, Waterloo-town,*
22*nd December,* 1858.

WONDERFUL CURE OF PULMONARY CONSUMPTION.

To the Editor of the Botanical Journal.

DEAR SIR,—Will you have the kindness to give my case a place in your Journal, as I consider I should only be doing my duty to the public and Dr. COFFIN'S Medico-botanic System of treating disease by making it known to the world; for, by its virtue, I have been rescued from the very jaws of death and the verge of the grave, after every other remedy had failed. I had the misfortune to take a cold early in March, 1857, which appeared at one time to have left me; but, in the latter part of that month, it returned with redoubled violence and settled on the bronchial tubes, producing a most violent cough. I continued to get worse and worse till Good Friday, April 2nd, 1858, when I was compelled to give up my work, and left my situation to go home. Early on the 3rd of April our family medical attendant was called in: after examining me he gave directions as regarded my diet, &c., and when he left he called my father on one side and told him my case was a very dangerous one, and, if great care was not taken, it would be very likely to end fatally. My father gave me up entirely to him, and told him to spare no means whatever which were necessary for my recovery; and I believe he exerted all his skill and paid every attention. But still I grew worse and worse; my cough became much more violent, the pain more acute, my breathing more difficult; and, on the 9th of the month, he told my parents that my case was now become an acute inflammation of the lungs, and that he wished for the assistance of another medical man. His request was immediately complied with, and they met at our house several times to hold consultations on my case, and I believe they had recourse to every means within their power to save me; but my disorder baffled all their skill, and, in spite of all their efforts, it still continued to gain the ascendancy over me, and over all their skill and perseverance, with fearful rapidity, and on the 15th of the same month (April) they pronounced me in a confirmed pulmonary consumption and totally incurable. Thus they consigned me to the grave, as they said such a case was entirely beyond the reach of medicine, and that a very short time would end the conflict. My first attendant, however, as if unwilling to give up, paid another visit on the Friday, when my weeping mother asked him if he thought I was any better? when he sternly replied (as if she had offered him an insult), "I told you before she never will be any better." By this time I was reduced to such a state that death was rather to be chosen than my present condition. I was obliged to be bolstered quite upright in bed, in a sitting position, being quite unable to help myself in the least, and sometimes not able even to ask for a drop of anything to quench my raging thirst. My breath, in fact, was almost gone. The greatest care was required in shutting my room-door, or in moving anything on my bed, as I could not bear even the slightest draught or puff of wind, my sufferings were so extremely great. My dosings (for I could not sleep) were accompanied as it were with constant murmurings. And thus all hope of ever rising again was entirely gone; but my father (as if guided by Providence), on Saturday, the 16th of April, started to Shrewsbury, to see Mr. Lacey, an agent and practitioner of Dr. COFFIN'S Botanical System of Medicine in that town, but found him so extremely busily engaged that he was totally unable to pay me a visit until the following Tuesday (the 20th). After he examined me he gave very faint or no hope of my recovery; but still he thought there might perhaps be some little chance, and at length, on my father urging him, he agreed to undertake my case. At four o'clock on the following Thursday morning I commenced taking his medicine

according to his directions, and in six hours after so doing it was manifest that the disease was arrested, my breathing being much relieved, my pains considerably abated, and I progressed so favourably that (however astonishing it may appear) I expressed a wish on the Friday to rise, but that was not granted; on Saturday I thought myself rather worse, although I was now beginning to have my natural feelings; but on Sunday I was much better and arose to a chair for my bed to be eased, and fancied that, by the assistance of a friend, I could stand on my feet. I tried, but fainted in the attempt. On Monday, however, with the assistance of my mother, I was able to walk down stairs, and sat up some time. On a visit of Mr. Lacey, on the 4th of May, he found me down stairs, sitting up, and I sat up most of that day. On that occasion he gave a very favorable opinion as regarded my recovery, and I am very thankful to be able to say, that from that time, under his care, I gradually but steadily improved, and am now enjoying good health again, and am quite able to resume my daily employment, to the astonishment of all who know me, especially as most of those who saw me when at the worst, took (as they thought) their final leave of me, not expecting ever to see me again alive in this world.

I have since then recommended many persons to try Dr. COFFIN's botanic system of treating disease, and I heartily wish, for the sake of suffering humanity, that that system was universally adopted, and I do hereby pledge myself to use all my influence to accomplish that end.

I have delayed this testimonial for some time, in order to prove the soundness of the cure. I have not taken any medicine since September last.

With a thankful heart to God, and my best wishes for the spread of Dr. COFFIN's system of treating disease, I beg to subscribe myself, dear sir, yours truly,

E. MILES.

Llanfair Waterdine, near Knighton, Radnorshire, November 20th, 1858.

What more than the above case can be required, even by the most sceptical, to prove the vast superiority of Dr. COFFIN's botanic system of treating disease? In this case a young woman "takes a cold;" the various medicines used are of no avail; she goes on from worse to worse, till, at length, after thirteen months' suffering, the disease has so progressed onward that she is compelled to leave her situation and return home. The family medical attendant, on examining her, finds her in a very dangerous state, and is apprehensive of a fatal termination. What does he do? does he arrest the progress of the disease? No! It steadily pursues its onward course for a whole week, under *his* care, at the end of which time he finds it has still gone onwards, and has now assumed the form of acute inflammation of the lungs, and he requires the assistance of another medical man, who is at once sent for. They both attend her: what is the result? Do their *combined* remedies check the disease? No! It still steadily marches on, in spite of *them* and their remedies, for *another* week, when they find that, instead of having in the *least* degree arrested its progress, their patient is now in a confirmed pulmonary consumption, and they at once consign her to the grave, stating that she is entirely beyond the reach of medicine, and that a short time will end the conflict. They then leave her to her fate, and nothing but her death is looked for by herself and her friends.

Now, mark the change in the aspect of affairs: An aged practitioner of Dr. COFFIN's system, residing nearly forty miles from her residence, is sent for: he finds her almost at the point of death and rapidly sinking; but still, anxious to save, he administers the life-restoring herbal medicines; their balmy influences prevail, they lay hold of the fleeting spirit, arrest its departure, and repair and strengthen the fabric of its abode so successfully, that on the fifth day the patient is enabled to leave her bed—the bed which not a week before was allotted to her, by her then medical attendants, for her bed of death; but, to the astonishment of *all*, she rises from it; she progresses onwards towards a cure, day by day, till at length, by a steady perseverance towards a perfect state of health, she obtains it; to praise the goodness of God, in his works of creation and providence, whereby such powerful remedies were given for the

use of man, in the hour of his greatest need. Thus, under the blessing of the great Creator of the Universe, by the use of herbal medicines alone was the apparently dying daughter restored to her parents and her friends, and the house of sorrow and mourning turned into the tabernacle of gratitude and joy.

J. LACEY.

Whyle-cop, Shrewsbury,
December 19th, 1858.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN's "Guide," and bid defiance to the mineral allopathic practitioner.

MEDICAL EDUCATION.

(Continued from page 83.)

IF medical science could be learnt only from oral teaching, and if the recognised teachers were not only the most able and learned in their respective departments, but were also constitutionally and artistically qualified to instruct in the most attractive and effective manner, the lecture and certificate system would be at least defensible. But the pulpit and the lecture-platform are giving way to the printing press. Every branch of science has its literature. There is no subject with which the medical student has to become familiar but what is embodied in systematic works and in manuals. The former present it with a fulness and accuracy of detail which mere lectures cannot rival; the latter condense and generalise it in a style which, by comparison, makes the verbiage of the majority of lectures unendurable. As before stated, lecturers generally become such in each medical school by virtue of being surgeons or physicians to the hospital to which the school is attached. But it by no means follows that because a man is an able physician or surgeon he is, *ipso facto*, an able teacher. In many notable instances he is just the reverse. Moreover, we have shown that it by no means follows that because a man holds an hospital appointment, he is *ipso facto* a skilful surgeon or an accomplished physician. Students are keenly alive to the relative merits of lecturers, and, if left to choose for themselves, would speedily select those men who have an unmistakable genius for teaching, and the knowledge and culture fitting them to use it with the utmost possible success. A majority of students select such men now, as we shall presently see; and to force them to pay for and attend lectures delivered by men who have not the power of commanding and retaining their attention, is an injustice and a folly, due partly to mistaken convictions and partly to self-interest, and is perpetuated by the State's protection of the medical corporations from the influence of competition.

As we have said, the student now virtually pays for the certificate instead of for instruction; and as neither eminent scientific knowledge nor great genius is requisite to sign certificates, the payment for them is too often but a premium on mediocrity. Sir Charles Bell was painfully alive to this truth, and holding primitive politico-economical views, said, in 1834, that Government should equalise the fees paid for lectures, because inferior teachers offer to teach at half price. "Their recommendation is, that they give

their certificates cheaply." The lecturer gets his fees, gives his lectures (often to empty benches), and signs his certificates, and thus ends his duties for the session. If he should concern himself to see that his pupils have really got the knowledge which his lectures are presumed to impart, and if he were at the same time able to impart it successfully, he would be a remarkable exception among the large number of "recognised" teachers, and would be fulfilling a duty not "nominated in the bond."

This absence of responsibility is an evil of the first magnitude, and is due exclusively to the certificate system. If men paid for knowledge instead of for certificates, and for that only when they want it, the lecturer would always be sure of an attentive and eager audience, and as the number of his class, and therefore of his fees, would depend on the extent of his knowledge and his capacity as an instructor, he would be effectually stimulated to qualify himself for his work in the best possible way, and would devote himself to his pupils. But now, being paid for his certificates, the lecturer devotes himself to his practice, and hastily enters the lecture-theatre, often without any preparation, trusting to his old stores for material, and to the gods for inspiration. The latter, proving unfaithful, often desert him; he then "gets through" his lecture, and hastens back to his patients. The same vice inheres in the present system of clinical instruction. It is usual for the physicians and surgeons to share amongst them the fees paid by students for certificates of admission to the hospitals. If students paid for instruction concerning the nature, cause, diagnosis, prognosis, and treatment of the diseases suffered by hospital inmates, physicians and surgeons of each hospital would be surrounded by those anxious for knowledge, would emulate each other in affording instruction, and would invite or encourage inquiry from their pupils in order to retain them; whereas now, having only to sign certificates, men of the largest private practice can hold hospital appointments, and being intent on seeing each patient in the smallest possible time, many of them rush round the hospital with such rapidity that clinical instruction is out of the question. Moreover, only the protective power of the certificate system sustains the absurd and stultifying regulations according to which physicians and surgeons visit their patients at the same hour at the very time when certificates are both expected and received from students that they have attended both.

As no teacher feels a pecuniary obligation to assure himself of the progress of his pupils, and as the moral one is not likely to be sufficiently strong, a large proportion of students, having got their certificates, seek the aid of men who are called grinders, and who most effectually justify their name by their admirable method of sharpening up the intellects of their pupils to the degree of acuteness requisite for passing through their examinations successfully.

We are fully conscious of our temerity and danger in venturing to give a truthful description of the ground on which we are now treading. It is curious that although the grinder is a direct emanation from the certificate system, and was created solely to supplement its defects, the very name of grinder stinks in the nostrils of "recognised lecturers," and may scarcely be pronounced in their presence unless in a whisper. They persist in ignoring him, and if they ever mention him, they only do so in anathemas, the language of which proves how profoundly ignorant they are of the nature of the grinding process. They assert that it consists of verbal cramming,—that the grinders acquaint themselves with the range of questions, some of which constitute the examination of each candidate for a diploma, and that they load the memories of their pupils with answers to all the questions likely to be asked, instead of informing their intellects and imbuing them with principles—whereas only by a clear understanding of the latter is a man truly educated. We deliberately assert that the method thus ascribed to the grinders is exactly that which they do *not* adopt, and that if "recognised teachers" would pay a visit to Messrs. Power, at Exeter Hall, or to Mr. Hinde, at 29, Newman-street, and would use their eyes and ears, instead of constructing the grinders "out of their moral consciousness" (as is the German process of con-

struction, according to a distinguished biographer of Goethe), they might not only change their opinions, but might also gather some hints highly useful to themselves, as teachers, in the ensuing session. Alas! knowledge is often inconvenient. It dissipates so many long-cherished and ingenious theories which nourish our self-love and minister to our comfort, that it seems little short of sacrilege to lift the veil of truth. But the nameless abstraction who is only known as the editorial "we" can have no feelings, and may therefore be expected to be ruthless.

We have reason to believe that large incomes are realised by the Messrs. Power and Mr. Hinde from their grinding operations, and we know that a large proportion of the men who in successive years become members of the College of Surgeons, or of the Apothecaries' Company, and of those who graduate at St. Andrew's, or who pass the competitive examination of the East India Company's Medical Board, have been enabled to do so by these teachers. Success is a potent argument in favour of the method by which it is achieved, and we think it is a strong presumption that that method is founded on reason and common sense. In fact, it combines the essential elements of all true teaching—personal responsibility, and an exclusive appeal to the reason. The grinder pledges himself, in consideration of a definite payment, to qualify his pupil to pass any given examination, and he adopts the only effectual way of storing his mind with the requisite knowledge, by taking care that he understands whatever is imparted to him. To ensure the memory of facts, they are clustered round principles. Education is an art of no mean order, and it is as difficult as it is noble. By vast labour and long experience these men have attained it. The lectures of Messrs. Power, by their comprehensiveness, lucidity, and conciseness, attest how much attention they give to perfect their chief medium of instruction, while the admirable illustrations of Mr. Hinde prove how much he must have practised with his pencil, and how important he deems it as an instrument of instruction. If the art of these men were possessed and practised by the recognised teachers, who can command the aid of the laboratory, the dissecting-room, and the hospital, how much more might be learnt than is learnt now in the time which is spent or misspent by students in getting their certificates, may be computed by the fact, that Messrs. Power enable men, marvellously ignorant, to pass the College of Surgeons or the Apothecatheries' Hall in a few months. It therefore follows, logically, either that the present enforced method of medical education involves the expenditure of a large amouut of superfluous time and money, or that the examinations are lamentably inadequate as tests of efficiency. We care not which conclusion is accepted as the true one. Each is fatal to the character of the existing system. If grinders do not give that practical instruction which is essential to a trustworthy physician or surgeon, it is not the method, but the nature of the examinations hitherto generally instituted, which is at fault. Supply only equals demand. Grinders are judicious men of business, who provide the article asked for at a remunerative price, and, of course, expend no superfluous labour upon it. But that they can produce a superior article, at a proportionately higher price, if demanded, is proved by the fact that they prepare men for the East Indian Board examination, which we believe is a test of professional knowledge and skill equal to any to which students are submitted in the United Kingdom. Of course, at present the main function of the grinder is that of supplementing the defects of the "recognised teacher;" but were the certificate system abolished, competition would force him to ensure instruction in practical anatomy, chemistry, &c., but he would take care that his own method of teaching should still be applied to each branch of study. It is, perhaps, fair to infer from Messrs. Powers' scale of charges, what is their estimate of the relative value of the different examinations, as tests of professional knowledge and ability:

For preparing a pupil to pass the London College of Surgeons	£5	5	0
„ „ to pass the Apothecaries' Company	5	5	0
„ „ to graduate at St. Andrew's	10	10	0
„ „ to pass the East India Board	15	15	0

To become a Licentiate of the London College of Physicians £21 0 0

Now, we maintain that if students were allowed to obtain their knowledge where and how they pleased, they would elect as their teachers men who proved themselves to be, equally with Messrs. Power and Mr. Hinde, real artists in their vocation. Oral instruction would doubtless be replaced to a great extent by books and private study; but many accomplished men, feeling themselves elected to the office of teacher by nature herself, would devote themselves to the task, and knowing that their pecuniary reward would be proportionate to their professional success, every available auxiliary, in the shape of practical demonstrations, in each department of science and medical and surgical art, would be called into requisition. Competition would stimulate exertion, would raise the ablest men to the first rank, would induce experiments of various methods, until the best are discovered and adopted; and would result in a vast amount of private tuition, which has the immense advantage of bringing the pupil in close personal relation with his teacher, whose moral as well as intellectual influence can then be most effectually exerted. Thus far it appears, then, that the best as well as the cheapest education will only be obtainable when the medical and surgical corporations shall cease to dictate the method of that education by authority derived from the State.

There has long been much diversity of opinion, and much discussion, concerning the value of any possible examination as a reliable test of competency—whether in the learned professions or in the civil service—and the assertion of its inadequacy is put forward as a justification of the certificate system. If the foregoing representation of the working and results of that system be true, much abstract reasoning in favour of it might have been spared by simply learning the facts. They prove that with respect to the object it is intended to achieve, its failure is total, and that it is productive of great and generally acknowledged evil. Therefore, inadequate and unsatisfactory as examinations are as tests of ability, knowledge, and skill, they are the only reliable security to be had. All thinking men acknowledge, we presume, that genius and wisdom cannot be gauged by a board of examiners; and that as the greatest powers generally take the longest time to ripen, the State would often reject its ablest servants, and the learned professions their brightest ornaments, were all who fail in the early part of their career to obtain the approval of examiners permanently excluded.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 84.)

Put about an ounce of marble grossly pulverised into an eight-ounce phial, with about an equal quantity of water. Pour upon it a little sulphuric acid, and carbonic acid gas will be evolved.*

Put some iron wire into a phial with about three or four ounces of water; pour a little sulphuric acid upon the contents, and hydrogen gas will be evolved.

Pour water into a small glass retort so as to occupy about one third of its capacity, lute its beak into the end of a gun-barrel, the middle of which must be kept red hot in a furnace, or by a chafing-dish; then, if a lamp be applied to the retort so as to cause the water to boil, the steam will pass through the red hot iron tube, and the water in this case also will be decomposed; for, as the oxygen combines with the iron, the hydrogen gas will be liberated, and may be collected in the usual way.

Put some sulphuret of iron into a phial, pour a little diluted sulphuric acid over it, and attach a bladder (prepared as directed in the note below), to the phial. Sulphuretted hydrogen, a gas extremely fetid and disagreeable, will immediately be evolved; though the ingredients here employed were destitute of smell.

Put an ounce or two of the black oxide of manganese into a small glass retort, pour a little concentrated sulphuric acid upon it, and apply the heat of a lamp.

* The cheapest receiver for the collection of this and other gases is a moistened bladder, with a piece of tobacco-pipe firmly tied into its neck, and twisted in such a manner as to expel all the common air. This may easily be adapted to any vessel by means of the pipe, which may be fixed in the cork, and closely luted in the usual way.

Oxygen gas will be disengaged in abundance.

Into a small glass retort put a mixture of two parts of quick lime, and one of muriate of ammonia, both in powder. Apply the heat of a lamp, and ammoniacal gas will come over.

Pour a little sulphuric acid upon a small quantity of quick-silver in a glass retort, apply heat, and sulphurous acid gas may be collected.

Take some copper wire or a few shreds of copper, and pour over them a little diluted nitrous acid, in the proportion of about three parts of water to one of acid. The gas evolved in this case is nitrous gas.

Upon an ounce or two of nitrate of potash in a glass retort pour some sulphuric acid, give it heat by means of a lamp, and collect nitrous acid gas.

Treat muriate of soda in the same manner with sulphuric acid, and muriatic acid in the gaseous form will rise from the retort.

Convey some muriatic acid gas into a glass jar containing a portion of ammoniacal gas produced as above. From the mixture of these two invisible gases a solid substance will be produced, viz., the common sal ammoniac; this may be perceived to deposit itself upon the sides of the vessel in a neat crystallised form.

Convey some carbonic acid gas into a glass jar containing a portion of ammoniacal gas. The instant the two gases come into contact a great absorption will take place, and solid carbonate of ammonia will be formed on the inner surface of the jar.

Whenever uncombined muriatic or any volatile acid is suspected to be present in any chemical mixture, it may be detected by ammonia. A single drop of ammonia on a feather, or small slip of paper, held over the mixture, will immediately render the vapour visible.

Ammonia in solution may in like manner be detected by a single drop of muriatic or acetic acid, which will produce very evident white fumes. This is merely the reverse of the former experiment.

Procure a bladder furnished with a stop-cock, fill it with hydrogen gas, and then adapt a tobacco-pipe to it. By dipping the bowl of the pipe into a lather of soap, and pressing the bladder, soap-bubbles will be formed, filled with hydrogen gas. These bubbles will rise into the atmosphere, as they are formed, and convey a good idea of the principle upon which air-balloons are inflated.

Procure a bladder similar to that described in the last experiment, and charge it with a mixture of oxygen and hydrogen gases. With this apparatus blow up soap-bubbles as before, and touch them with a lighted match. The bubbles as they rise will explode with a smart noise.

Fill a bladder with hydrogen gas; apply a lighted match to the end of the tobacco-pipe, and press the bladder gently. A pencil of flame, extremely beautiful, will be seen issuing from the pipe, till the whole of the hydrogen gas is consumed.

Place some small phials on the shelf of the pneumatic tub filled with water, and inverted as usual for receiving gases. Now fill these with mixed oxygen and hydrogen gases. A lighted match will cause any one of them to explode with violence. When the phials are used, it will be prudent to fold them round with a handkerchief, to prevent any injury being received from the glass in case of bursting; but if small bladders be employed in place of the phials, this precaution will be unnecessary.

Procure a glass jar, such as is generally used for deflagrating the gases, and fill it with oxymuriatic acid gas. If nickel, arsenic, or bismuth in powder, be thrown into this gas, and the temperature of the atmosphere be not lower than 70°, the metal will inflame, and continue to burn with the most brilliant combustion.

Put a small piece of phosphorus into a crucible, cover it closely with carbonate of lime or pulverised common chalk, so as to fill the crucible. Let another crucible be inverted upon it, and both subjected to the fire. When the whole has become perfectly red hot, remove them from the fire; and when cold, the carbonic acid of the chalk will have been decomposed, and the black charcoal, the basis of the acid, may be easily perceived amongst the materials.

Place a lighted wax taper within a narrow glass jar, then take a jar or phial

of carbonic acid gas, and cautiously pour it into the jar containing the taper. This being an invisible gas, the operator will appear to invert merely an empty vessel, though the taper will be as effectually and instantaneously extinguished as if water itself had been used.

Let sulphuric acid be poured into a saucer upon some acetate of potash. Into another saucer put a mixture of about two parts of quick-lime and one of sal ammoniac, both in powder, adding to these a very small quantity of boiling water. Both saucers, while separate, will yield invisible gases; but the moment they are brought close together the operator will be enveloped in very visible vapours. Muriate of soda, in this experiment, may be substituted for acetate of potash.

(To be continued.)

Those that study either the body or the mind of man, very often find the most specious and pleasing theory falling under the weight of contrary experience; and, instead of gratifying their vanity by inferring effects from causes, they are always reduced at last to conjecture causes from effects.—JOHNSON.

SUBSCRIPTIONS
FOR THE BOTANIC HOSPITAL.

Collected by Mr. Yeat £3 0 0

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Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 279.—Vol. IX. SATURDAY, JANUARY 22, 1859. Price 1d.

LECTURES ON MEDICAL BOTANY.

Dr. Coffin will deliver the first of a course of twelve Lectures on Medical Botany at the Southwark Literary Institution, Borough-road, S. E., on the 25th inst., and will continue each succeeding Tuesday evening until the termination of the course.—Chair to be taken at eight o'clock.—A syllabus of the lectures may be had of Mr. T. Bean, 7, Bridgehouse-place, Newington Causeway, Dr. Coffin's general wholesale and retail Agent for the Borough and the City of London.

Dr. Coffin may be *consulted*, *gratis*, at his Agent's, Mr. Bean, 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street, every Thursday morning, from ten to one o'clock.

THE GLEANER, No. 25.

FUNCTIONS OF THE NERVOUS SYSTEM.

Moreover some of the actions, which have been designated as instinctive, such as that of sucking in the infant, is purely reflex, not even involving consciousness: thus the instinctive actions of animals are truly *automatic* in their character: they are performed by the instrumentality of the cranio-spinal axis in the vertebrata, and of the ganglia which correspond to them in invertebrated animals; and they originate in impressions made upon the different nerves, either by external objects, or by changes taking place in the internal organisation, which impressions excite respondent motions, either through the ganglia of consensual or those of reflex action, according as they are or are not of a nature to require the consciousness of the animal to be acted upon, as a link in the chain of their operation upon the muscular system.

Observation.—The highest development of the purely instinctive tendencies with the least possible interference of intelligence, is to be found in the class of social insects, such as the bee, wasp, &c., in which we observe every indication of the absence of a power of choice, and of the entire domination of instinctive propensities, called into action by sensations. Thus, although bees display the greatest art in the construction of their habitations, and execute a variety of curious contrivances, beautifully adapted to variations in their circumstances, the constancy with which individuals and communities will act alike under the same conditions appears to preclude the idea of their possessing any inherent power of spontaneously departing from the line of action to which they are tied down by the constitution of their nervous system We do not find one individual or one community clever, and another stupid, nor do we ever witness a disagreement, or any appearance of indecision as to the course of action to be pursued by the several members of any republic. The actions all tend to one common end, simply because they are performed in respondence to impulses which all alike share. For a bee to be destitute of its peculiar tendency to build at certain angles, would be as remarkable as for a human being to be destitute of the desire to eat, when his system should require food.

But we may trace the agency of the sensory ganglia in man and the higher vertebrata, not merely in their direct and independent operation on the muscular system, but also in the manner in which they participate in all voluntary actions. There can be no doubt that in every exertion of the *will* upon the muscular system, we are guided by the sensations communicated through the different nerves which indicate to the sensorium the state of the muscle. Thus, Sir C. Bell (who first prominently directed attention to this class of facts, under the designation of the *nervous circle*), mentions an instance of a woman who was deprived of it in her arms without losing the motor power, and who stated that she could not sustain anything in her hands, not even her child, by the strongest effort of her will, unless she kept her eyes constantly fixed upon it; the muscles losing their power, and the hands dropping their object, as soon as the eyes were withdrawn from it. Here the employment of the *visual* sense supplied the deficiency of the *muscular;* but instead of being inseparably connected, as the latter is in the state of health, with the action of the muscle, the former could be only brought to bear on it by an effort of the will, and the sustaining power was therefore dependent, not upon the immediate influence of the will upon the muscle, but upon the voluntary direction of the sight towards the object to be supported. Again, in the production of vocal sounds, the nice adjustment of the muscles of the larynx, which is requisite to produce determinate tones, can only be learned in the first instance under the guidance of the sensation of the sounds produced, and can only be effected by an act of the will, in obedience to a mental conception (a sort of inward sensation of the tone to be uttered), which conception cannot be formed unless the sense of hearing has previously brought similar tones to the mind. Hence it is that persons who are born *deaf* are also *dumb*. They may have no malformation of the organs of speech, but they are incapable of uttering distinct vocal sounds, or musical tones because they have not the guiding conception or recalled sensation of the nature of these. By long training, and by efforts directed by the muscular sense of the larynx itself, some persons thus circumstanced have acquired the power of speech, but the want of a sufficiently definite control over the vocal muscles, is always very evident in their use of the organ. The conjoint movement of the two eyes, which occur to direct their axis towards the same object are among the most interesting of these actions in which volition and consensual action are alike concerned, and they afford an excellent illustration of the necessity for guiding sensations, to determine the action of muscles. The sensations, however, are not so much those of the muscles themselves as those received through the visual organ; but the former appear capable of continuing to guide the harmonious movements of the eyeballs when the sense of sight has been lost. It is a striking peculiarity of these movements that in the majority of them two muscles or combinations of muscles of opposite action are in operation at once; thus, when the eyes are made to rotate in a horizontal plane, the internal rectus of one side acts with the external rectus of the other. In most other cases there is a difficulty in performing two opposite movements on the two sides at the same time. Thus, if we move the right hand as if winding on a reel, and *afterwards* make the left hand revolve in a contrary direction, no difficulty is experienced, but if we attempt to move the two *at the same time* in contrary directions, we shall find it almost impossible.

It is not difficult to account, on the foregoing principles, for the fact which has been a source of great perplexity to metaphysicians and physiologists, that movements which were at first performed voluntarily, and which even required a distinct effort of the will for each, may become, by habitual repetition, so far independent of the will, that they are performed when the whole attention of the mind is bestowed upon some other train of action. Thus we all know that in walking along an accustomed road, we frequently occupy our minds with some perfectly continuous chain of reasoning; and yet our limbs continue to move under us with regularity, until we are surprised by finding ourselves at the place of our

destination, or perhaps at some other which we had not intended to visit, but which habit had conducted us. Or we may read aloud for a long time, without having in the least degree comprehended the meaning of the words we have uttered, our attention having been closely engaged by some engrossing thoughts or feelings within. Or a musician may play a well known piece of music whilst carrying on an animated conversation. Some metaphysicians have explained these facts by supposing (as the mind cannot *will* two different things at the same time) the volition is in a sort of vibratory condition between the two sets of actions, now prompting one and now the other. But it would seem much more conformable to the analogy afforded by other physiological phenomena to regard these, with Hartley, as secondarily automatic; that is, as taking the place, in man, of those actions which are primarily and purely automatic in many of the lower animals. We shall see that, even when most purely voluntary, these actions are performed by the instrumentality of the automatic apparatus; and the influence of habit gradually links on the movements to the sensations which at first guided them, in such a manner that the latter at last come to be themselves adequate exciters of the movement, when the series has been once commenced by an exertion of the will. It has been thought by some to be a sufficient proof of the voluntary nature of these movements, that we can check them at any time by an effort of the will; but this we do only when the attention has been recalled to them, so that the cerebrum, liberated as it were from its previous self-occupation, resumes its usual play upon the automatic centres. In the performance of such habitual actions, it would seem as if the first start having been given by the will, the sensation involved in each movement becomes the stimulus to the next, and so on, till the habitual series is concluded, or the attention is called back to them. This view is confirmed by the fact, that in case of severe injury of the brain, in which intelligence and will seem completely in abeyance, habitual actions may often be excited.

(To be continued.)

THE EAR.

(Continued from page 78.)

THE diseases of this organ are numerous, and their effect is generally a partial or total destruction of the function of hearing. One of the most frequent causes of deafness is an accumulation of indurated or hardened wax in the ear, which presses against the tympanum and impedes or stops its vibration, or else wholly blocks up the passage, and so prevents the vibration, and of course causes deafness.

TREATMENT.

Saturate a small portion of cotton wool with oil of almonds, which when nipped out, as before directed, insert in the ear, and let it remain for a day or two. Then carefully and tenderly syringe the ear with warm milk and water, or a solution of soap, or *common salt*, which is an excellent solvent of the accumulated wax; after which carefully cleanse the ear with cotton wool, using the utmost tenderness. Should these means prove ineffectual, recourse must be had to extraction.

Deafness is sometimes the consequence of a dry state of the ear, arising from a defective action of the cerumenous glands.

TREATMENT.

Apply gentle stimulants by means of cotton wool about half way down the external passage: a weak solution of tincture of myrrh will be found very beneficial.

EXTRANEOUS BODIES IN THE EAR.

These may often be extracted by means of a small forceps or by syringing the ear with tepid water. Should these means prove unsuccessful the bodies may be suffered to remain if they do not create pain, as, in a short time, they may be forced out with the accumulating wax. Insects may be killed by filling the ear with oil and afterwards removed by injections of warm water. A few drops of an infusion of tobacco in oil of almonds introduced into the ear, and retained there by means of a piece of cotton wool, will generally destroy them; then let the ear be carefully cleansed with tepid water and dried with cotton wool.

INFLAMMATION AND SUPPURATION.

SYMPTOMS.

Considerable pain darting through the ear; redness and heat; these either gra-

dually diminish, and at length entirely cease, or matter is formed and discharged at the meatus. Chronic ulceration is not unfrequently the consequence of the disease; when a discharge of an acrid, fetid matter from the ear becomes habitual.

TREATMENT.

In the inflammatory state.—Warm water frequently poured into the meatus auditorius, or the introduction of soft wool dipped in the common decoction for fomentations.

In the chronic state.—Injections of soap and water are mostly very beneficial.

Sudden colds and catarrhal affections frequently produce temporary deafness; and it is necessary, in all diseases of the ear, as well as in other local diseases, to keep the system in proper order by botanic medicines.—See Dr. COFFIN'S "Guide to Health."

ON THE PRESERVATION OF HEALTH IN WOMEN.

(*Concluded from page* 65.)

WE still continue with our statistics:—

Hypogastric bearing down pains, referred by women to the regions of the womb, and ovaries, had		existed	in 255
,,	,,	augmented	in 150
,,	,,	same	in 60
,,	,,	less.....	in 45
,,	,,	none	in 245
			500

GANGLIONIC SYMPTOMS.

Sensations of faintness, exhaustion, and sinking, often referred to the epigastric region ..	in 130
Heats and flushes	in 190
Perspirations	in 150
Drenching sweats	in 80
	550

It appears that most of the ganglionic symptoms are efforts of nature to promote health, but, when very intense, must be treated as a disease. Use nothing depletive, but assist nature by using the herbal medicines described in Dr. COFFIN'S "Guide to Health;" and if an emetic be required, take lobelia inflata.

Leucorrhœa had existed	in	290
,, augmented	in	220
,, stationary	in	40
,, diminished	in	30
		580

Observation.—Cessation of menstruation is rather curative than productive of inflammatory diseases of the womb.

At the change women are more than ever liable to cancer.

Hemorrhoids or piles existed to various extents	in	100
,, appeared for the first time	in	60
,, did not bleed	in	20
,, were bleeding	in	40
,, were considerably increased after cessation	in	20
,, remained the same.....	in	10
,, diminished at cessation ..	in	10
Intestinal hemorrhage existed	in	10
Diarrhœa existed	in	60
,, was irregular	in	40
,, was regular by coming on every month	in	20
		60

When diarrhœa occurs at cessation it generally appears at irregular intervals.

The usual diseases of cessation are more annoying than dangerous; and those affections which precede menstruation may likewise be expected to precede cessation.

Women should be impressed with the conviction of the diseases and annoyances that await them, while, at the same time, they should be convinced, that *those* which they really have to bear depend upon causes much under their own control.

For practical purposes, women at cessation may be divided, first, into those of a strong constitution, who are of a sanguine temperament; second, those of a weak constitution, who are of the lymphatic, nervous temperament. These suffer less at cessation, and become stronger and more healthy, though the nervous have floodings and head affections.

Cessation tells most forcibly on the sanguine.

It is a well established fact that all, or at least the majority, of the diseases, statistics of which we have given, have arisen from the artificial life induced by what is termed civilisation, but no more like true civilisation than we are to Hercules. While late hours are kept; late amusements continually followed, turning the night into day; all the artificial moods of existence continued in; fashion, that changeable idol, implicitly followed, irrespective of that which conduces to health; the gentler sex will inevitably suffer during the periods ad-

verted to in this article, and so far as they persist in the above conduct, so far will disease be continued.

Heaven forbid that we should advise a return to uncultivated, savage life, though it is true that the women in this state of existence suffer none of the consequences detailed; yet, by a due observance of regimen, and keeping the frame in health by exercise, breathing pure air, and due care at the important periods, much of the sufferings may be avoided, or at least greatly mitigated, in a high state of civilised society. The Indian women and denizens of the woods suffer nothing at such times. The hardy and robust daughters and wives of the agricultural labourer, &c., are scarcely inconvenienced by those natural incidents. The women of the manufacturing districts, from their sedentary, confined life, are more liable to attacks enumerated in our statistics; and so the predisposition to attacks of disease, before, at, and after menstruation and cessation, increases in a direct ratio with the adoption of artificial moods of existence; and we would earnestly advise the purchase and careful study of Dr. COFFIN'S "Treatise on Midwifery and the Diseases of Women and Children," a work so simple and perspicuous in its diction, so comprehensive and replete in all its important details, with such full yet plain details of the preventive and curative medicines, with their proper application, which renders it so easy even to the simplest capacity, yet fraught with such a fund of invaluable information that the highest capacity must be improved by its perusal and benefited by its contents; in short, a work that ought to be in the possession of every adult female throughout the length and breadth of the land.

EXPERIMENTS IN CHEMISTRY.

(Continued from page 96.)

IT is an interesting experiment to place a glow-worm within a jar of oxygen gas in a dark room. The insect will shine with much greater brilliancy than it does in atmospheric air, and appear more alert. As the luminous appearance depends on the will of the animal, this experiment probably affords an instance of the stimulus which this gas communicates to the animal system.

Paste a slip of litmus paper within a glass jar, near the bottom, then fill the jar with water, and invert it on the shelf of a pneumatic trough. If as much nitrous gas, previously well washed, be passed into the jar as will displace the water below the level of the paper, the colour of the litmus paper will still remain unaltered, but on passing up atmospheric air it will immediately be reddened; showing the formation of an acid, by the mixture of two gases.

Take a few grains of citric acid, and twice as much dry carbonate of potash or of soda, both in powder; mix them, and put them into a dry glass. No chemical change will take place in either of these salts; but the moment water is poured upon them, an effervescence and extrication of gas will ensue, affording an instance of the necessity of water to promote some chemical decompositions.

On the Formation and Crystallisation of Salts.

If common Glauber's salt be dried and reduced to powder, and then dissolved in three times its weight of boiling water, it will not only be found to crystallise again on cooling, but the crystals will assume the identical forms which they exhibited before they were pulverised. This experiment is designed to show that a determinate figure has been instamped upon every individual salt.

Dissolve three quarters of an ounce of Glauber's salt in two ounces of boiling water, pour it while hot into a phial and cork it close. In this state it will not crystallise, even when perfectly cold; but if the cork be now removed, the crystallisation will be seen to commence and proceed with rapidity; affording an instance of the effect of atmospheric air on crystallisation.

Repeat the experiment with a small thermometer immersed in the solution, and closed so as to exclude the atmospheric air. If the solution be suffered to cool completely under these circumstances, the thermometer will be seen to rise on the removal of the cork. This experiment is designed to show that saline solutions give out caloric in the act of crystallisation.

Put half an ounce of quicksilver into

a wine-glass, and pour about an ounce of diluted nitrous acid upon it. The nitrous acid will be decomposed by the metal with astonishing rapidity; the colour of the acid will be quickly changed to a beautiful green, while its surface exhibits a dark crimson: and an effervescence indescribably vivid and pleasing will go on during the whole time the acid operates upon the quicksilver. When a part only of the metal is dissolved, a change of colour will again take place, and the acid by degrees will become paler, till it is pellucid as pure water. This is one instance of a metallic solution by means of an acid; in which the opacity of a metallic body is completely overcome, and the whole rendered perfectly transparent.

Take the metallic solution formed in the last experiment, add a little more quicksilver to saturate the acid; then place it at some distance, over the flame of a lamp, so as gently to evaporate a part of the water. The new-formed salt will soon be seen to begin to shoot into needle-like prismatic crystals, crossing each other in every possible direction; affording an instance of the formation of a metallic salt.

Pour a small quantity of strong nitrous acid into a wine-glass, add twice its quantity of distilled water*, and, when mixed, throw a few very small pieces of granulated tin into it. A violent effervescence will take place, the lighter particles of the tin will be thrown to the top of the acid, and be seen to play up and down in the liquor for a considerable time, till the whole is dissolved. This is another example of a transparent liquid holding a metal in solution.

Dissolve one ounce of quicksilver *without* heat in three quarters of an ounce of strong nitrous acid, previously diluted with one ounce and a half of water. Dissolve also the same weight of quicksilver, *by means of heat*, in the same quantity of a similar acid, and then to each of these colourless solutions add a solution of potash. In the first case, the metal will be precipitated in a *black*, in the other, in a *reddish-yellow* powder, affording an example of the difference of colour of metallic oxides, arising from different degrees of oxidisement.

Take an ounce of a solution of caustic soda, pour upon it half an ounce of sulphuric acid; lay the mixture aside, and when cold, crystals of sulphate of soda will be formed in the liquor. Here a mild salt has been formed from a mixture of two *corrosive* substances.

Take carbonate of ammonia (the common volatile *smelling* salt), and pour upon it muriatic acid so long as any effervescence continues. The produce will be a solid salt, perfectly *inodorous*, and of little taste.

Take caustic soda one ounce; saturate it with muriatic acid, both of these corrosive substances. The produce will be our common table salt.

Mix in a wine-glass equal quantities of a saturated solution of muriate of lime, and a saturated solution of carbonate of potash, both transparent *fluids:* stir the mixture, and a solid mass will be the product.

Take the substance produced in the foregoing experiment, and pour a very little nitric acid upon it. The consequence will be, the solid matter will again be taken up, and the whole exhibit the appearance of one homogeneous fluid. An instance of a solid *opaque* mass being converted by a chemical agent to a transparent liquid.

Take a transparent saturated solution of sulphate of magnesia (Epsom salt), and pour into it a like solution of caustic potash or soda. The mixture will immediately become almost solid. This instance of the sudden conversion of two fluids to a solid has been called *chemical miracles.*

(To be continued.)

* Where distilled water is not at hand, clean *rain* water will answer nearly as well for most purposes.

DISLOCATIONS.

The general importance of this subject, we think, will be a sufficient reason for its introduction to the notice of our readers, especially when such accidents are of daily occurrence. It is, indeed, a portion of knowledge most useful to every individual; and when we take into consideration the ease with which dislocations may

generally be reduced, by first relaxing the muscles of the part, in accordance with the general practice laid down in Dr. COFFIN'S "Medico-Botanic Guide to Health," in his article on the subject. We have no doubt but that the majority of persons will, by our descriptions and details, be enabled, by exerting a degree of presence of mind, joined to coolness and self-possession, to reduce dislocations in whatever joints they may happen. Thus prefacing, we commence.

Dislocation is the secession of a bone of a moveable articulation from its natural cavity.

Cause.—Accidental violence.

General Treatment.—1. To reduce the protruded bone to its original place. 2. To retain it in that situation. 3. To obviate any attendant or consequent morbid symptoms.

THE LOWER JAW.

This luxation can only take place in one direction, *i. e.*, forwards and downwards.

*Diagnosis.** — When both sides are luxated, the mouth is widely opened, the chin thrown forwards towards the breast, and the speech is inarticulate. When a dislocation has happened on one side only, the mouth is distorted, and widest on the sound angle of the jaw, which is drawn a little towards the contrary side, and a small hollow may be perceived behind the displaced condyle.†

Treatment.—The thumbs of the operator, secured with a covering of linen or leather, are to be introduced into the mouth, and pushed as far as possible between the jaws, while the fingers should at the same time be applied to each angle of the outside.

Attempts must now be made to move the bone from its situation, by bringing it first a little forwards, and then pressing it forcibly dowwards; when it will generally slip into its place without further trouble. When the jaw has been once dislocated, it readily becomes so again; and therefore a broad tape with a hole cut in it to receive the chin, divided into four ends by splitting it on each side some way down, is to be tied over the top of the head and occiput, to confine the jaw until the lacerated parts have healed.

The patient should for some time avoid much speaking, or the swallowing of hard substances.

THE HEAD.

Diagnosis.—The head, when luxated, generally falls forward on the breast. There is an instant deprivation of sense and motion; and if a reduction be not speedily effected, death must ensue.

Treatment.—The head should gradually be drawn up, whilst the shoulders are pressed downwards by an assistant, until the bones are brought into their place; when the patient, if the injury has not been fatal, gradually recovers his senses.

The head should long be retained in an elevated position by instruments contrived for that purpose; and should symptoms of fever or irritation come on after the accident, it will be necessary to use other appropriate means for its reduction.

THE SPINE.

Diagnosis.—The symptoms vary as the luxation happens to be high up, or at the inferior part of the vertebral column. There is a total paralysis of all the parts beneath the place where the accident has happened; there is either a suppression of urine and fæces, or they are discharged involuntarily.

Treatment.—The attempts for reduction will vary with the direction of the dislocation. It is recommended to lay the patient on his face over a cylindrical body of a proper size, and in this position to endeavour to reduce the bones to their proper situation, by slowly bending the body forwards or to one side.

THE CLAVICLE.

The clavicle may be dislocated either at its junction with the scapula, or with the sternum.

Diagnosis.—It is discerned by the unnatural tumour of the part; by the shoulder falling forwards; by the want of mobility; and by tracing the bone along its extent.

Treatment.—The arms and shoulders of the patient are to be firmly drawn backwards by an assistant, whilst the

* The art of recognising a disease by its symptoms, and of distinguishing one disease from another.

† A process of a bone in the shape of a flattened head or eminence.

operator replaces the protruded end of the bone; the stellate bandage is now to be applied*, and the arm supported by a sling.

THE HUMERUS.

The humerus may be dislocated in three different directions:—1. Downwards into the axilla. 2. Forwards under the clavicle. 3. Backwards on the scapula.

Diagnosis.—In a dislocation of the os humeri, the usual rounded appearance of the shoulder is lost, and the lower edge of the pectoral muscle is drawn into a straight line; there is an inability to raise the arm; and when forcibly raised, an angle is perceptible in the middle, having the appearance of a fracture at that part. Upon feeling for the head of the bone, an unusual vacuity is perceived under the acromion of the scapula.

Downwards.—The arm of that side is longer than the other, and hangs close to the body; the head of the humerus may be felt in the armpit.

Forwards.—The arm is separated from the body in an angle of several degrees; it is considerably shorter, and, upon rotary motion, the head of the bone is felt lying under the middle of the clavicle.

Backwards.—The tumour is alone a sufficient diagnostic.

Treatment.—Occasionally, by bending the fore-arm upon the humerus, laying hold of the latter immediately above the condyles, practising extension, and guiding the head of the bone appropriately with the left hand, the dislocation is readily reduced. The plan usually adopted by Sir Astley Coooper is the following: The patient should be placed in a recumbent posture, near the edge of a table or sofa; the surgeon then binds a wetted roller round the arm, immediately above the elbow, upon which he ties a handkerchief; then, with one foot resting on the floor, he separates the patient's elbow from his side, and places the heel of his other foot in the axilla, receiving the head of the os humeri upon it; whilst he is himself in the half-sitting posture, by the patient's side. He then draws the arm, by means of the handkerchief, steadily for three or four minutes; when, under common circumstances, the head of the bone is thus easily replaced; but if more force be required, a long towel may be applied instead of the handkerchief, by which several persons may pull, the heel still remaining in the axilla. The biceps is relaxed by bending the fore-arm nearly at right angles with the os humeri. Or a bandage, or small belt, is to be passed under the axilla of the injured side, and carried over the opposite shoulder; by this means, when extension is made, the scapula will be prevented from moving. A second belt is to be applied just above the elbow of the dislocated arm. By the latter of these a gradual extension must now be made, in a direction obliquely downwards and outwards; the body being at the same time kept immoveably fixed, by assistants drawing the former belt in an opposite direction. After this extension has been kept up for a short time, during which it should be gradually increased in force, the operator is with one hand to draw or push back the scapula, with the other to direct the bone into its cavity.

When the luxation has been of long standing, or in cases where the head of the bone is protruded far forwards under the pectoral muscle, extension can seldom be made, by the hands of assistants, with sufficient force. Reduction may be facilitated by the vapour bath.

THE RADIUS AND ULNA.

The radius, with the ulna, may be dislocated either upwards and backwards, or partially inwards and outwards. The radius may be dislocated forwards.

Diagnosis.—When the dislocation is upwards and backwards, the fore-arm is shortened, the olecranon of the ulna projects, and is higher than usual; the extremity of the humerus cannot be felt in the bend of the elbow.

When inward, the sight alone will be sufficient to ascertain the displacement of the bone.

When the radius is dislocated alone, it is generally thrown forwards on the external condyle of the humerus. In this case the rotary motion of the arm is destroyed; the fore-arm is so bent as to form a con-

* A single bandage of moderate breadth, and is applied by passing it under the axilla (arm-pit) of one side, and over the shoulder of the opposite, describing on the back the figure of 8, and should be drawn with considerable tightness.

siderable angle with the os humeri; and the patient is incapable of extending it.

Treatment.—Extension is to be made by assistants upwards by the humerus, and in a contrary direction downwards by the fore-arm; while the operator guides the protruded bone into its cavity. Reduction is sometimes more easily effected by making the knee the fulcrum of a lever, by which (in the dislocation backwards) the coronoid process of the ulna may be lifted out of the cavity formed for receiving the olecranon.

When the dislocation happens to be either inwards or outwards, simple extension in the directions above mentioned, with pressure of the extremity of the bone, will, in general, alone be sufficient.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

MEDICAL EDUCATION.

(Continued from page 94.)

WE are very far, therefore, from holding up examination-tests as infallible: we simply maintain that in the great majority of cases they supply the only available data for judgment, and that for all practical purposes they are successfully applicable. We believe, moreover, that the extent of their efficacy still remains to be learnt. We are by no means sure that the best methods of examination are adopted. We doubt whether the practice of testing a man's qualifications by the copiousness of his memory is so trustworthy as that of inferring his fitness to contend with the protean forms of disease from the display of his reason and judgment concerning real or supposed cases placed before him. And it seems to us that the former method is applied far more extensively than the latter. We are confirmed in this opinion by the general admission of medical men, that within a few months after the date at which a physician or surgeon has received his diploma, he has forgotten so much of what was essential to enable him to obtain it, that, were he to submit to a fresh examination identical with that he formerly underwent, he would be rejected. Then, again, the time occupied in examining whether a man is qualified to become a general practitioner is far from sufficient. A glance at the list of subjects in which a student is examined within a single hour at Apothecaries' Hall will show how superficial and inadequate the examination must be. They are as follow:—Latin; Chemistry (inorganic, organic, and practical); Materia Medica, Pharmacy, and Therapeutics; Botany (including Vegetable Physiology); Anatomy and Physiology; Pathology; Principles and Practice of Medicine; Midwifery and the Diseases of Women and Children. Such is the system of examining according to Act of Parliament! The London College of Surgeons likewise spends only one hour in examining each candidate for membership; but as this college examines on only three subjects—Anatomy, Physiology, and Surgery—the proportionate time which it expends in testing the merits of its candidates greatly exceeds that

occupied by the Apothecaries' Company.* So long as 1000 men are by this system adjudged worthy to be annually added to the professional body, it is wasting words to talk of the powerlessness of examinations to test the ability and knowledge of candidates. The fact is, the examiners both of the College of Surgeons and of the Apothecaries' Company have chiefly trusted to the enforcement of their respective curricula of study in order to secure properly qualified candidates; and thus the certificate system is not only fraught with the evils already described, but actually renders the examinations comparatively nugatory by inducing examiners to rely upon its plausible and delusive assurances.

Though the examiners under the Apothecaries' Act give too little time to their duties, the comparatively few years during which that Act has been in force precludes the possibility of ancient abuses, while the annual election or re-election of the examiners ensures thoroughly competent men, and stimulates them to discharge their duties as effectually as possible within the short time allotted to them. But the London Corporation of Surgeons being ancient, as well as being protected from the reforming element, old abuses have been long perpetuated. Until 1843, the ten senior members of the council were the examiners, and they were appointed for life. In 1834, two of these gentlemen were respectively eighty-three and ninety-five years old; and Mr. Grainger states in evidence that he knew of an instance in which they were the sole examiners. He also implied that the deafness of some of these aged examiners has resulted in the rejection of candidates deserving the diploma. Mr. Guthrie states, as a reason for making certain changes in the method of the examination, in order to suit the convenience of these venerable men, that "they could not sit from five o'clock in the evening till one in the morning without going to sleep." It is as unreasonable as it is vain to expect that such men should retain that minute knowledge of anatomy which it is presumed that a duly qualified examiner possesses, and which confessedly it is extremely difficult at any age, without constant practice, to retain; or that they should keep pace with the rapid progress of physiological science. And thus it is not unlikely that candidates examined by such men will most surely gain their approval by learning the views held and taught by them in their prime, rather than by giving expression to the most recent doctrines and precepts of science. The Parliamentary Committee of 1834 were informed by Mr. Grainger, that one of the most industrious students he had ever known was rejected by the London College of Surgeons, because, in answer to a question concerning the best time for amputating a limb affected with traumatic gangrene, he stated the modern and correct doctrine instead of the one expected from him, which was already abandoned by the most enlightened section of the profession. Sir Astley Cooper, in order to investigate nature's method of mending broken bones, broke the legs of a number of animals; and, killing them at various intervals after the date of fracture, observed the successive stages of repair. He found in most instances a considerable increase in the diameter of the part (by the exudation of lymph ultimately ossified) at the junction of the fragments. The specimens in which he found the reparative process to have gone on without this increase of thickness he considered imperfect and threw away, retaining those only which displayed it, and from which he confirmed the doctrine that the normal process by which bones are repaired involves a provisional increase in the diameter of the bone. This thickening is called a *callus*. Now, the fact is, this *callus* is only formed when there is motion of the fragments against each other; when perfect immobility is maintained, no *callus* is needed, therefore none is provided. But we heard a lecturer, after teaching the true doctrine concerning the presence and absence of a *callus*, caution his pupils to state at the College of Surgeons that the formation of a *callus* is a part of nature's regular process in repairing shaft bones. Again, we

* Up to 1834 the examination of the College of Physicians lasted but about thirty minutes, and was conducted in Latin; so that a good physician but bad classic would have a worse chance than a good classic but bad physician. Now the examination is conducted in English, is both in writing and *vivâ voce*, and extends over four days.

have been told that quite recently an experienced surgeon stated that, in cases of angular curvature of the spine, it is unwise and injurious to confine the patient to her bed or couch as is usual; that it is best to support the back by certain contrivances, which he described, and then to give her her freedom; but he added, the examiners of the College of Surgeons expect to be told that the patient must be persistently confined to her bed. We can easily understand that an examining board may rightly assume a conservative attitude towards new doctrines, until their truths shall have been long tested, but unless this conservatism be the result of wise caution, rather than of ignoring such doctrines altogether, it will seriously impede the advance of surgical science, and the application of principles which enlightened experience has sanctioned.

We are glad to say, that under the new charter of the College of Surgeons, the examiners hold office during the pleasure of the council, and that fellows are eligible. None, however, except members of the council have been appointed, and these, we believe, still in the order of seniority. But we know from an authentic source that the examination has gradually increased in rigour and effectiveness during the last fifteen years; and a further change in the right direction is now being made: the examination is about to be extended, and the requisite number of lectures slightly diminished. There is no just reason whatsoever why the examinations should not be very greatly extended, simultaneously with granting to students the freedom of adopting such plans as they may individually find most effective, in order to prepare for it. If examiners cannot afford to give more time than they do now, unless more liberally remunerated, their salaries or fees ought at once to be increased. If the medical bodies were not "close corporations" by authority of Government, their so-called members or licentiates would long ago have given effect to their strongly expressed opinions by electing examiners, not by seniority, but on the ground of their scientific competency, and would have fixed the charge for each examination or diploma at such rate as would yield a sum capable of remunerating the examiners sufficiently—taking care that that sum should be properly applied. The College of Surgeons of Edinburgh examines its candidates in all the subjects comprised in the conjoint examinations of the London College of Surgeons and Apothecaries' Company, and yet charges only £6 for its diploma; whereas the London College charges £22, and the Apothecaries' Company £10 : 10 for testimonials of only an equivalent value. The London Apothecaries' Company received for licenses during the nineteen years ending 1834, £43,037 : 8, but the examiners during that period received only £19,797 : 16 : 9; so that, with the exception of a reasonable sum for a secretary, porter and offices, the enormous balance has been expended on objects which are foreign to the purpose for which payments for diplomas ought exclusively to be appropriated. Since that date the same system has continued. We have already shown what large sums the Company has squandered on useless prosecutions. Mr. Lawrence, now one of the examiners of the London College of Surgeons, states that from 1745 to 1796 the college received £80,000, in the shape of fees, £16,000 of which was paid to the examiners, and that "the greater part of the remainder had been dissipated in useless extravagance." The nett amount of fees (after deducting stamp-duty) paid to the college for examinations of candidates for membership alone, during the ten years ending 1855, was £84,298 : 10, or an average of £8,429 : 17 a year, while the nett income from the same source in 1855 was £10,940. During the same ten years only £24,429 : 5 of this princely revenue was divided amongst the examiners; so that, at a moderate estimate, the college otherwise disposes of £5000 or £6000, derived from members who have no vote respecting its appropriation. This sum is mainly devoted to objects in which the majority of the members have no interest, and concerning which they are in no way consulted. Here we have another illustration of the baneful effect of the protective system: students are either compelled to pay about two-thirds more than they ought to do for their diplomas —even assuming that the one-third given

to examiners is judiciously expended—or the large sum which they do pay is not so applied as to raise and maintain the educational standard of the college at that pitch which is clearly attainable by means of the revenue at its command. Whichever view we take, the profession and the public alike suffer. Whereas, if the Government allowed the constituency of the college to assume the administration of its own affairs, it would speedily determine what minimum sum payable on admission into it, would enable it to establish and liberally remunerate a thoroughly effectual court of examiners, and what standard of education is most conformable to the means and abilities of the majority of candidates, and best calculated at once to supply the wants and be within the reach of the middle and lower classes of the people.

(To be continued.)

NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

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The Editor has several miscellaneous sets of the Anatomical and Botanical Drawings, which he offers at an extremely low price, and are to be obtained at 134, High Holborn. They consist of the following :—

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NOTICES TO CORRESPONDENTS.

R. BROWN, Newcastle.—Your suggestion has just chimed in with our intentions. It is not within our province to give a medical opinion. A statement of the case laid before Dr. COFFIN, accompanied with the usual fee, will be the only method of procedure.

POST-OFFICE ORDERS and all communications for goods &c., to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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LECTURES ON MEDICAL BOTANY.

Dr. Coffin deliverd the first of a course of twelve Lectures on Medical Botany at the Southwark Literary Institution, Borough-road, S. E., on the 25th ult., and will continue each succeeding Tuesday evening until the termination of the course. The chair was ably filled by W. Taylor, Esq., who, after giving a very able and manly address, introduced the doctor to the audience. The doctor's entrance was welcomed by a burst of applause. The lecture was delivered in his usually powerful and impressive manner, and in many parts elicited decided marks of approbation. A syllabus of the lectures may be had of Mr. T. Bean, 7, Bridgehouse-place, Newington Causeway, Dr. Coffin's general wholesale and retail Agent for the Borough and the City of London.

Dr. Coffin may be *consulted*, *gratis*, at his Agent's, Mr. Bean, 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street, every Thursday morning, from ten to one o'clock.

THE GLEANER, No. 26.

FUNCTIONS OF THE NERVOUS SYSTEM.

That the *cerebellum* is in some way connected with the powers of *motion* might be inferred from its connection with the antero-lateral columns of the spinal cord, as well as with the posterior; and the comparative size of the organ, in different orders of vertebrated animals, gives us some indication of what the nature of the function may be. For we find its degree of development corresponding pretty closely with the variety and complexity of the muscular movements, which are habitually executed by the species; the organ being largest in those animals which require the *combined* effort of a great variety of muscles to maintain their usual position, or to execute their ordinary movements, whilst it is the smallest in those which require no muscular exertion, for the one purpose, and little combination of different actions for the other. Thus in animals that habitually rest and move upon four legs, which is the case with most reptiles, there is comparatively little occasion for any organ to combine and harmonise the actions of their several muscles; and in these the cerebellum is usually small. But among the more active predaceous fishes (as the shark), birds of the most powerful and varied flight (as the swallow), and such mammals as can maintain the erect position, and can use their extremities for other purposes than support and motion, we find the cerebellum of much greater size, relative to the remainder of the encephalon. There is a marked advance in this respect as we ascend through the series of quadrumanous animals, from the baboons, which usually walk on all-fours to the semi-erect apes, which often stand and move on their hind-legs only. The greatest development of the cerebrum is found in man, who surpasses all other animals in the number and variety of the combinations of muscular movement which his ordinary actions involve, as well as those which he is capable, by practice, of learning to execute. From experiments upon all classes of vertebrated animals, it has been found that when the cerebellum is removed, the

power of walking, springing, flying, standing, or maintaining the equilibrium of the body, is destroyed. It does not seem that the animal has in any degree lost the *voluntary* power over its individual muscles, but it cannot combine their actions for any general movements of the body. The *reflex* movements, such as those of respiration, remain unimpaired. When an animal thus mutilated is laid on its back, it cannot recover its former posture, but it moves its limbs or flutters its wings, and evidently is not in a state of stupor. When placed in the erect position, it staggers and falls like a drunken man. Phrenologists, who attribute a different function to the cerebellum, have attempted to put aside these results, on the ground that the severity of the operation is alone sufficient to produce them; but many animals may be subjected to a much more severe operation, the removal of the cerebral hemispheres, without the loss of the power of combining and harmonising the muscular actions, providing the cerebellum be left uninjured. Thus, then, the idea of the functions of the cerebellum, which we derive from comparative anatomy, seems fully borne out by the results of experiment; and it is also consistent with the conclusions to which observation of pathological phenomena seems to lead. Some of these phenomena, however, appear to indicate that either the median lobe of the cerebellum, or some collection of ganglionic matter in its vicinity, is the centre of *sexual* sensibility, which seems distinct from "common" or "tactile" sensibility.

It appears to be through the instrumentality of the cerebrum or *hemispheric ganglia*, that the sensations awakened in the *sensorium* give rise to *ideas*, which then become the material of all the higher psychical operations. It is not alone, however, by the exercise of the reasoning faculties, leading to voluntary determinations, that mental states react upon the motor apparatus; for we find that EMOTIONAL excitement will give rise to movements which are as involuntary as the automatic, and which reason and will may, in vain, endeavour to keep in check. And the distinctness of their character is further obvious from this, that cases of paralysis not unfrequently occur (especially in the facial nerve, through which the muscles of expression are for the most part excited to action), in which the muscles are obedient to an emotional impulse, though the will exerts no power over them; whilst in other instances, the will may exert its due influence, and yet the emotional state cannot manifest itself. There are, moreover, several disordered states of the nervous system (such as chorea and hysteria), in which irregular or convulsive movements totally unrestrainable by the will, are directly consequent upon emotional excitement. It has been supposed by some, that the emotional movements of man and the higher animals might be ranked in the same category with the instinctive actions of the lower; and that the desires of the former are comparable to the instinctive propensities of the latter. But this comparison is erroneous; for such propensities are nothing else but tendencies to perform given movements in respondence to particular sensations, without any idea of the purpose of the movement or of the object which has excited it; and a desire involves a conception of the object to be attained. The *imitative* actions will afford a good example of the difference between a propensity and a desire. The former is manifested in such imitative actions as are purely consensual; the sensation in each case exciting the movement automatically, as when we yawn involuntarily, from seeing or hearing the action performed by another, or as infants learn to perform many of the movements which they witness in adults. But in other instances, imitative actions are voluntary, being the result of a *desire* to perform them, which involves a distinct idea of the object; and being at the same time a source of pleasure to the performer, which is the spring of the desire. Thus we find the two sources of action to be so distinct, that the tendency to involuntary or automatic imitation may be very strong in an individual who is utterly unable to mimic or imitate voluntarily, and who has no conscious inclination to do so.

Now, when the emotions and moral feelings are analysed, we find them to be in like manner complete in their nature, being made up by the association of *ideas*, which are cerebral in their seat,

with the simple feelings of pleasure and pain, which are probably localised in the sensorium. Thus benevolence may be defined to be the pleasurable idea of the happiness of others. The whole class of selfish emotions, on the other hand, is nothing else than the pleasurable contemplation of objects of supposed value to self. Combativeness, again, is the pleasurable idea of antagonism to others; veneration, the pleasurable contemplation of rank, or perfections superior to our own; hope, the pleasurable anticipation of future enjoyment; cautiousness, a combination of the painful contemplation of future evil, with a pleasurable idea of the precautions taken to prevent it. Now, when emotions are excited by external sensations, these emotions may act downwards through the automatic system, producing movements which may be in direct antagonism to the will. Thus we may see or hear something ludicrous, which involuntarily provokes laughter, although we may have the strongest possible motives for desiring to restrain it. This downward action of the emotions appears, then, to have its immediate seat in the sensory ganglia, in which pleasurable and painful feelings are excited by the ideas formed in the cerebrum, and it is by the strong excitement of these feelings, that the emotional movements are called into play. No ideas purely intellectual, that is, not associated with feelings, will give rise to movements resembling the emotional. The purely emotional actions are not always directly excited, however, by external sensations, for they may result from the operations of the mind itself. Thus involuntary laughter may result from a ludicrous idea called up by some train of association, and having no obvious connection with the sensation which first set this process in operation, and the various movements of the face and person, by which actors endeavour to express strong emotions, are only effectual in conveying their meaning when they result from the actual working of the emotions in the mind of the performer, who has, by an effort of the will, identified himself with the character he personates.

(To be continued.)

DISLOCATIONS.

(*Concluded from page* 105.)

THE WRIST.

THE wrist may be dislocated either inwards, outwards, or backwards.

Diagnosis.—The sight alone is sufficient to ascertain the nature of the injury. In the dislocation backwards, where there is generally much swelling and tension, by tracing the bones of the fore-arm, the unusual projection formed by the carpus may readily be discovered.

Treatment.—As the preceding dislocation.

Dislocations of the *bones of the carpus* but seldom occur. The mode of reducing them will be obvious.

THE FINGERS AND TOES.

Dislocation of the phalanges of the fingers or toes is uncommon; but, when it does occur, it more frequently happens between the first and second phalanges, than between the second and third.

Diagnosis.—The accident may be readily distinguished by the projection of the first phalanx backwards, while the head of the second can be, although less distinctly, felt under the theca.

Treatment.—The dislocation may be reduced, by practising extension with a slight inclination forwards, to relax the flexor muscles. If the bone has not been dislocated many hours, it is easily reduced; but, if the dislocation be neglected at first, it can only be effected by a long-continued extension very steadily applied. Dislocations of the toes are more difficult of reduction, from their greater shortness and the less pliability of the joints.

THE HIP.

The os femoris may be dislocated in four different directions.

1. *Downwards into the foramen ovale.*

In this case the leg is lengthened by an inch and a half; the knees are forcibly separated from each other; the foot is turned outwards; a vacancy is perceived in the parts which the head of the bone and the great trochanter usually occupy.

Treatment.—A strong belt or roller must be passed round the pelvis, and the ends carried over the hip of the sound side, where they are either to be

firmly held by assistants, or confined to some immoveable body. A second roller is now to be passed between the thighs, and its extremities carried in a direction contrary to the first applied; *i. e.* over the dislocated hip. By the latter of these, extension is then to be made in a direction upwards and outwards; the former meanwhile being prevented from altering its position. The operator is at the same time to endeavour to elevate the head of the bone over the projecting acetabulum, by means of a sling passed over his own shoulder, and under the thigh of the patient. Reduction will be effected with great facility, if the knee be bent to a right angle with the body, and pushed inwards towards the opposite leg.

II. *Forwards on the pubes.*

Diagnosis.—The head of the bone is distinctly felt in the groin, while the projection of the hip, and the usual fulness surrounding it, are lost. The foot is considerably turned outwards; but the length of the leg is not altered.

Treatment.—Differs from that recommended for the preceding, only in the extension being required to be made in a direction directly outwards; whilst the knee is elevated to a right angle with the body.

III. *Upwards and backwards on the ileum.*

Diagnosis.—The leg is considerably shortened, as may be easily discovered by comparing it with that of the sound side; the foot is turned much inwards; the limb will not admit of rotary motion, and the great trochanter, on that side, is felt considerably higher than on the opposite.

Treatment.—The belt must be passed around the pelvis, and secured, as directed for the first dislocation. A second is to encircle the dislocated thigh, immediately above the knee, and with this extension is to be made obliquely downward, and towards the other leg.

IV. *Downwards and backwards into the foramen ischii.*

Diagnosis.—The leg is lengthened only in a slight and imperceptible degree; the projection of the trochanter is lost; the foot is turned greatly inwards.

Treatment.— The body being secured in the usual manner, the thigh is to be drawn upwards towards the abdomen, and depressed against the other leg, when extension is to be made outwards and rather upwards, by means of a roller passed around the thigh above the knee, as before directed; but the utmost perseverance and skill will often be insufficient to effect reduction when the hip has been thus dislocated.

THE PATELLA.

The patella may be luxated either sideways or upwards; in which latter case, the ligament with which it is connected is torn through, and the bone is drawn up several inches among the muscles of the thigh. The nature of the case can be distinctly ascertained, both by the sight and by manual examination.

Treatment.—In the dislocation sideways, the limb must be firmly extended; when pressure being made upon the protruding edge, either directly inwards, or rather downwards, it immediately regains its former situation.

The dislocation upwards is to be treated precisely as a transverse fracture of the bone; which see.

THE TIBIA.

The tibia may be dislocated partially, either inwards, outwards, or backwards.

Diagnosis.—The situation of the dislocated bone is obvious to the sight.

Treatment.—Extension is to be made upwards by the femur, and downwards by the fore-leg, while the bones are replaced by pressure with the hand.

THE ANKLE.

A dislocation of this joint may take place, either inwards, outwards, or forwards.

Diagnosis.—The two former cases may be ascertained by the inclination of the foot, and by the unnatural protuberance on one side, and deficiency on the other.

When the tibia is forced forwards on the tarsus, the foot is considerably shortened: there is a great and unusual projection of the heel.

Treatment.—Reduction is to be effected by extension, made in the same manner as in a dislocation of the knee.

Dislocations of the bones of the tarsus are of rare occurrence: their mode of treatment will be obvious.

MEDICAL EDUCATION.

(*Continued from page* 108.)

If a self-governing constituency were to charge £20, or any larger sum, for admission into its body, and it could secure a first-rate education of its members by enforcing a payment of only £5 on admission, it would have an unquestionable right to appropriate the surplus to whatever objects it pleased; but so long as the members have no voice in the disposal of such surplus, and so long as the State virtually prevents the formation of a College of Surgeons on the principle of self-government, justice demands that the State-established institution shall exact from candidates for its diploma only such sum as will fairly remunerate an efficient court of examiners, and provide for the requisite offices, *materiel*, and officials. The exaction of any sum beyond what is requisite for such purposes is, viewed from the standard of abstract right, simply robbery by Act of Parliament. If this view be correct, the reason given by Mr. Guthrie, in 1848, for not lowering the price of the diploma is totally inadmissable. He says, "We cannot maintain our establishment as it is; we have paid £16,000, the other day for more ground, and we shall require £20,000 for a new museum;" and proposes, without the assent of the great body of men who contribute the College of Surgeons' revenues, to divert a part of them to a fund "for the benefit of old members, their widows and orphans," and to pensioning off examiners when they shall attain the age of seventy. For such reasons he actually urges that no Englishman, having the £6 diploma of the Edinburgh College, should be allowed to practise in his own country until he has paid to the London College the difference between the cost of the Edinburgh and London diploma! We are far from thinking that English surgeons would begrudge a reasonable provision to worthy claimants on their funds, or that they would fail to establish and sustain such museums or libraries as may be desirable for the advancement of their profession: we simply insist that such appropriations can justly be made only with their consent.

But descending again to the expediency argument, a very slight experience is needed to show that the members of a council, elected by the whole constituency of the college, and removeable on proof of maladministration, are likely to be a far more efficient executive than is obtainable from a body either self-elective or chosen by a small and privileged class, whose interests may often be identical with those of the officials themselves. In the one case they are responsible ministers, controlled by their electors, and having the strongest inducements to do their duty, as loss of office and its emoluments would follow any abuse of their trust; in the other, they are irresponsible masters, whose wrongdoings can neither be punished nor arrested; or at best, an oligarchy of officials and electors, who, mainly intent on their own advancement, disregard the interest of the general body, which can exert no influence upon them. The history of the museum of the London College of Surgeons supplies an instance of the irreparable neglect due to irresponsibility, too striking and mournful ever to be forgotten. By his will the celebrated John Hunter directed that the option of buying his invaluable museum of comparative and pathological anatomy should be offered to Government. It bought it in 1799 at a cost of £15,000, and gave it to the College of Surgeons, *in trust for the people.* In 1806 the Government granted to the College £15,000 to erect a building to contain the gift, the College binding itself to complete it in three years. This pledge was not fulfilled, and in 1810 Government supplemented the grant by £12,500 more; but despite all this aid the museum was not even "got into reasonable order" before 1814, and was inaccessible to the profession, except during thirty-four days of the year, and then only four hours a-day, until about 1826, when the vigorous remonstrances of the profession caused it to be open seventeen additional days during the year. Not until 1841 was the museum thrown open each day, and then only by pressure from without. Such was the neglect and culpable exclusiveness of an irresponsible council protected by Government. We wish

this were all. But the story of the destruction of Hunter's descriptive catalogues and manuscripts relating to the specimens in the museum, while ensuring the eternal infamy of Sir Everard Home, proves indubitably, as it seems to us, that but for the negligence and reprehensible procrastination of the board of curators the irreparable loss might have been averted. Along with the museum, as an essential part of it, were the MSS. just mentioned. Those were of such extent as to constitute about twenty folio volumes. Without them the collection was unintelligible, and therefore comparatively valueless; and by a passage in Hunter's will, they are expressly referred to, along with the museum, and bequeathed with it upon trust to Dr. Baillie and Sir Everard Home, who were to offer the whole "in one entire lot," to Government. Just when the transfer of the museum to the College of Surgeons was about to be effected, the manuscripts were taken in a cart by Mr. Hunter's apprentice, Mr. Clift, to Sir Everard Home's house by his order. Hunter married his sister, and he had been Hunter's pupil and assistant in the museum. The knowledge he thus acquired, his relationship to Hunter, and his influence in the College of Surgeons, caused him to be deputed to make a catalogue of the collection. Mr. Clift's evidence to the Parliamentary Committee of 1834, implies that the College authorities knew from the beginning that Sir Everard Home had taken possession of the manuscripts, and that this possession was acquiesced in, on the ground that he was deputed to make the catalogue. He says, "I believe all the members of the board of curators had a very imperfect knowledge of the nature of those papers, yet they knew that Sir Everard had in his possession all Mr. Hunter's manuscripts." Mr. Clift adds that the members of the board of curators obtained a knowledge of the existence of the papers "through Sir Everard himself, while he was a member of that board. Besides which, almost all of them had been acquainted with Mr. Hunter, and must have known of the existence of a large mass of manuscripts." At the time of Mr. Hunter's death, and for some time afterwards, they were deposited in the anteroom of the collection, and must have occupied a conspicuous position. Moreover, three folio volumes of these MSS. were placed "on the table beside Hunter, when his portrait was painted by Sir Joshua Reynolds," so that neither their existence nor their nature could be ignored. In fact, as Mr. Clift held the office of conservator of the museum from the time he delivered the MSS. at Sir Everard Home's house, in 1800, until their destruction in 1823, it is quite clear that, on the many occasions when Sir Everard's delay in making the catalogue was referred to, his possession of the MSS. must not only have been notorious, but was acquiesced in by the College authorities, chiefly from a disinclination to call Sir Everard to account, or to assume a hostile attitude towards a man of great influence in the College, and a trustee of the museum itself, which office he held until his death.

(To be continued.)

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

BOG BEAN (MENYANTHES TRIFOLIATA).

DESCRIPTION.—This elegant herb is perennial, with ternate leaves of a fine green, frequently growing in the form of a bean. (Hence its name.) Its root is long, round, and very slightly coloured with green, as are also those parts of the stem which are less exposed to the air.

PLACE.—Frequent in watery, marshy places, especially in a black, boggy soil.

TIME.—It flowers in June or July.

QUALITIES.—It is one of the most valuable bitters in nature, one of the very best correctors of the bile, and seldom fails, when rightly applied, to produce the happiest results, by striking at once at the origin of the disease. This simple herb may be administered in tea, or given as a powder. We highly recommend it for feminine weakness, and particularly at the time when menstruation should commence.

The old man looks down, and thinks of the past. The young man looks up, and thinks of the future. The child looks everywhere, and only thinks of the present.

BOG BEAN

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN's "Guide," and bid defiance to the mineral allopathic practitioner.

PHYSIOLOGY OF MAN.

"Man, know thyself, presume not God to scan;
The proper study of mankind is man."

WE have, we hope, for the instruction of our readers, given, at various times, physiological articles, though not precisely in regular order, and as we cannot know too much of or concerning ourselves generally, as well as particularly, we commence a series of articles upon this most interesting branch of knowledge. Our first subject is, "Peculiarities of the Human Animal Economy."

In the diversity of the regions which man is capable of inhabiting, the lord of the creation holds the first place among animals. His frame and nature are stronger and more flexible than those of any other creature: hence he can dwell in all situations on the surface of the globe. The neighbourhood of the pole and the equator, high mountains and deep valleys, are occupied by him: his strong but pliant body bears cold, heat, moisture, light or heavy air: he can thrive anywhere, and runs into less remarkable varieties than any other animals which occupy so great a diversity of abodes—a prerogative so singular, that it must not be overlooked.

The situations occupied by our species in the present times extend as far as the known surface of the earth. The Greenlander and Esquimaux have reached between 70° and 80° of North latitude, and Danish settlements have been formed in Greenland in the same high latitude. Three Russians lived between six and seven years on Spitzbergen, between 77° and 78° N. L. The Negro lives under the equator; and all America is inhabited even to Tierra del Fuego. Thus we find that man can exist and propagate his species in the hottest and coldest countries of the earth.

The greatest natural cold ascertained by thermometrical measurement was that experienced by the elder Gmelin in 1735, at Jeniseik: the mercury froze in the thermometer. The sparrows and jays were all killed. When Pallas was at Krasnoiarsk, the quicksilver also froze in the ball of the thermometer; and a large mass of pure mercury froze in the open air. Our own countrymen experienced apparently as severe a degree of cold on the Churchill River in Hudson's Bay. Brandy was frozen in the rooms where they had fires. Yet the Canadian savages and the Esquimaux go to the chase in this temperature; and the inhabitants of the countries visited by Gmelin and Pallas cannot remain in their houses all the winter. Even Europeans accustomed to warmer climates can undergo such cold as I have just mentioned, with impunity, if they take exercise enough. The Danes have lived in Greenland in 72° N. L.; and the Dutch, under Heemskerk, wintered at Nova Zembla in 76° N. L. Some of them perished; but those who moved enough, and were in good health at first, withstood the dreadful cold, which the polar bear, apparently born for these climes, seems to have been incapable of supporting; for their journal states, that, as soon as the sun sinks below

the horizon, the cold is so intense that the bears are no longer seen, and the white fox alone braves the weather. We have another example, in which three men remained between six and seven years in 78° N. L.

The power of the human body to withstand severe cold, will appear in a more remarkable light, when we observe what heat it is capable of bearing. Boerhaave asserted that a temperature of from 96° to 100° would be fatal to man. The mean temperature of Sierra Leone is 84° Fahr. Messrs. Watt and Winterbottom saw the thermometer frequently at 100°, and even 102° and 103° (in the shade), at some distance from the coast. Adanson saw it at 108½° in the shade at Senegal in 17° N. L.: and Buffon cites an instance of its being seen at 117½°. The country to the west of the Great Desert may be still hotter than Senegal, from the effect of the winds which have swept over the whole tract of its burning sands. When the sirocco blows in Sicily, the thermometer rises to 112°, according to Brydone. Dr. Chalmers observed a heat of 115° in South Carolina in the shade: and Humboldt of 110° to 115° in the Llanos or deserts near the Orinoco in South America.

Thus man can support all possible degrees of atmospherical heat and cold: he has an equal power of supporting varieties of pressure. The ordinary pressure of the air, at the level of the sea, may be reckoned at 32,325lbs. for the whole surface of the body, supposing the barometer at 30 inches. If we ascend to a height of 12,000 feet, of which elevation extensive tracts, inhabited by thousands, are found in South America, the barometer stands at 20¼ inches, and the pressure is 21,750 lbs. Condamine and Bougier, with their attendants, lived three weeks at a height of 2434 toises, or 14,604 French feet, where the barometer stood at 15 in 9 lines, and the pressure must consequently have been 16,920 lbs. In the Peruvian territory, extensive plains occur possessing an altitude of 9000 feet; and three-fifths of the vice-royalty of Mexico, comprehending the interior provinces, present a surface of half a million of square miles, which runs nearly level at an elevation between 6000 and 8000 feet. Mexico is 7475, and Quito 9550 feet above the level of the sea. The hamlet of Antisana, 13,500 feet above that level, is the highest inhabited spot on the surface of our globe, but Humboldt ascended Chimboraço, to 19,300 feet. There are no instances of men living under a pressure much greater than what has been mentioned: the depths to which the earth has been penetrated in the operations of mining, are trifling in this point of view. In diving, however, the body is subject to, and can bear, several atmospheres; as, on the contrary, in balloons, men have ascended beyond any point of elevation on the surface of the earth, and have consequently been exposed to a much more considerable diminution of the ordinary pressure than what is stated above.

As the physical capabilities of his frame enable man to occupy every variety of climate, soil, and situation, it follows of necessity, that he must be omnivorous; that is, capable of deriving sufficient nourishment and support from all kinds of food. The power of living in various situations would be rendered nugatory by restriction to one kind of diet.

If it was the design of nature, that the dreary wastes of Lapland, the naked and barren shores of the Icy Sea, the ice-bound coasts of Greenland and Labrador and the frightful deserts of Tierra del Fuego, should be not left entirely uninhabited, it is impossible to suppose that either a vegetable or even a mixed diet is necessary to human subsistence. How could roots, fruits, or other vegetable productions be procured, where the bosom of the earth is closed the greater part of the year, and its surface either covered with many feet of snow, or rendered impenetrable by frost of equal depth? Experience shews us that the constant use of animal food alone is as natural and wholesome to the Esquimaux, the Samoides, the inhabitants of Tierra del Fuego, &c., &c., as the most careful admixture of vegetable and animal matters is to us. We even find that the Russians, who winter on Nova Zembla, are obliged to imitate the Samoides, by drinking fresh rein-deer blood, and eating raw flesh, in order to preserve their health. In the memoir already quoted, Dr. Aikin informs us that these practices were found most conducive to health in those high

northern latitudes. Hence we shall be less surprised at finding men, in certain situations, living and enjoying health on what seems to us the most filthy and disgusting objects. The Greenlander and the inhabitant of the Archipelago between north-eastern Asia, and north-western America, eat the whale, often without waiting for cookery. The former bury a seal, when they catch one, under the grass in summer, and the snow in winter, and eat the half-frozen, half-putrid flesh with as keen a relish as the European finds in his greatest dainties. They drink the blood of the seal while warm, and eat dried herrings moistened with whale oil.

In the torrid zone, on the contrary, circumstances are very unfavourable to raising and supporting those flocks and herds of domesticated animals, which would be necessary to supply the numerous population with animal food. The number, fierceness and strength of beasts of prey, the periodical alternations of rains and inundations with the long-continued operation of a vertical sun, whose direct rays dry up all succulent vegetables and all fluids, are the principal and insurmountable obstacles. The deficient supply of flesh is most abundantly compensated by numerous and valuable vegetable presents; by the cocoa-nut, the plantain, the banana, the sago-tree; by the potato, yam, cassava, and other roots; by maize, rice, and millet; and by an infinite diversity of cooling and refreshing fruits. By these precious gifts, nature has pointed out to the natives of hot climates the most suitable kind of nourishment: here, accordingly, a vegetable diet is found most grateful and salubrious, and animal food much less wholesome.

In the temperate regions of the globe, all kinds of animal food can be easily procured, and nearly all descriptions of grain, roots, fruit, and other vegetable matters; and, when taken in moderation, all afford wholesome nourishment. Here, therefore, man appears in his omnivorous character. As we pass from these middle climes towards the poles, animal matters are more and more exclusively taken: towards the equator, cooling fruits and other produce of the earth constitute a greater and greater share of human diet.

The diversity of substances composing the catalogue of human aliments, offers a strong contrast to the simple diet of most other animals, which, in their wild state, are confined to one kind of food, either animal or vegetable, and are often restricted to some very small part of either kingdom. Hence it has been conceived that man also ought to confine himself to one sort; that he probably did so in *his natural state;* and that the present variety in his bill of fare is the consequence of degeneration or departure from nature. The question of the *natural food* of man has, therefore, been much agitated.

The nature of an animal is only to be learned by an observation of structure, actions, and habits. From the powerful fangs and jaws, the tremendous talons, the courage, and the vast muscular strength of the lion, and his constant practice of attacking living prey, we pronounce his nature to be ferocious, predatory, and carnivorous. From evidence of the same sort, we determine the nature of the hare to be mild, timid, and herbivorous. In a similar way we conclude man to be naturally omnivorous; finding that he has instruments capable of procuring, masticating, and digesting all descriptions of food, and that he can subsist in health and strength on flesh or vegetables only, or on a mixture of both.

It is alleged in reply, that man in society is artificial and degenerate; and the object of inquiry is stated to be, What does he feed on before civilisation, in his original, unsophisticated condition? Generally on animal food, the produce of the chase or the fishery; because vegetable food cannot be obtained in sufficient certainty and abundance, until something like settled habits of life have begun, until the arts, at least that of agriculture, have commenced. If the rudest barbarism be the most natural state of man, the New Hollanders, and the inhabitants of Van Dieman's Land, are the most unexceptionable specimens; raised, and but just raised above the level of brutes. These savages are very thinly scattered, in small numbers, and at wide intervals, along the coasts of the great Austral Continent; and derive their support from the sea. They are not, however, pure ichthyophagists, as they

sometime get a kangaroo, a bird, or a few roots, and sometimes the large larvæ of an insect from the bark of the dwarf gum-tree (eucalyptus resinifera): sometimes they mix their roots with ants, and their larvæ into a paste.

The individuals whom we send to New South Wales are not the best specimens of our iron age; yet they are far beyond these children of nature, in physical and moral attributes.

The Greenlanders, the Kurilian and Aleutian islanders, the wandering hordes of Asia, and the hunting tribes of North America, are, perhaps, too much civilised to be admitted as examples of natural man: they are all carnivorous.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 102.)

Pour boiling water upon a little red cabbage sliced, and when cold decant the clear infusion. Divide the infusion into three wine-glasses. To one add a solution of alum, to the second a little solution of potash, and to the third a few drops of muriatic acid. The liquor in the first glass will assume a purple, the second a bright green, and the third a beautiful crimson. Here is an instance of three different colours from the same vegetable infusion, merely by the addition of three *colourless* fluids.

Prepare a little tincture of litmus. Its colour will be a bright blue with a tinge of purple. Put a little of it in a phial, and add a few drops of diluted muriatic acid; its colour will change to a *vivid red.* Add a little solution of potash; the red will now disappear, and the *blue* will be restored. By these means, the liquor may be changed alternately from a red to a blue, and from a blue to a red, at pleasure.—An instance of the effects of acids and alkalies in changing vegetable colours.

Make an infusion of red roses, violets, or mallow-flowers; treat it with solution of potash, and it will become *green;* the addition of diluted muriatic acid will convert it immediately to a *red.* This experiment may be as frequently varied as the last, and furnishes an excellent test for acids and alkalies.

Add a drop or two of solution of potash to tincture of turmerick. This will change its original bright *yellow* colour to a dark *brown:* a little colourless diluted acid will restore it. By this tincture we can detect the most minute portion of any alkali in solution.

Into a wine-glass of water put a few drops of prussiate of potash, and a little dilute solution of sulphate of iron into another glass; by pouring these two *colourless* fluids together, a bright deep blue colour will be immediately produced, which is the true prussian blue.

Put some prussiate of potash into one glass; into another a little nitrate of bismuth. On mixing these colourless fluids, a yellow will be the product.

Pour a little prussiate of potash into a glass containing a *colourless* solution of sulphate of copper, and a reddish-brown will be produced, being a true prussiate of copper.

Pour a little tincture of litmus into a wine-glass, and into another some diluted sulphate of indigo; pour these two blue fluids together, and the mixture will become perfectly red.

Take water holding carbonate of iron in solution, and add some diluted prussiate of potash. Prussian blue will be formed by the mixture.

Take some of the same water as that used in the last experiment; boil it, and now add prussiate of potash. In this case, no colour will be produced.

Take some water impregnated with carbonic acid, and add to it a little blue tincture of litmus. The whole will be changed to a red.

Take some of the same carbonated water, and boil it. Then add a little tincture of litmus, and the blue colour will experience no change.

Prepare a phial with pure water and a little tincture of galls; and another with a weak solution of sulphate of iron; then mix these transparent colourless fluids together, and they will instantly become black.

Take some of the same black liquid, add by degrees muriatic acid to it, and the colour will be discharged. Now drop in a little solution of potash, and the black

colour will be restored. Some nicety is requisite in adding the acid and alkali; for if they be given in excess, the effects will not be so apparent.

Drop as much sulphate of copper into water as will form a colourless solution: then add a little ammonia, equally colourless, and an intense blue colour will arise from the mixture.

Take the same blue solution, add a little sulphuric acid, and the colour will disappear; pour in a little solution of caustic ammonia, and the blue colour will be restored. Thus may the liquor be alternately changed at pleasure.

If a spoonful of good alcohol and a little boracic acid be stirred together in a teacup, and then set on fire, they will produce a very beautiful green flame.

If alcohol be inflamed in like manner with a little pure strontites in powder, or any of its salts, the mixture will give a carmine flame.

If barytes be used instead of strontites, we shall have a brilliant yellow flame.

If alcohol contains muriate of magnesia, it has the property of burning with a reddish-yellow flame.

Evaporate to dryness a solution of gold, made with nitro-muriatic acid, and dissolve the crystals in a sufficiency of pure water to prevent the crystallisation of the metallic salt. Thoroughly moisten a little magnesia with this aqueous solution, and place the mixture in the sun's rays. A change of colour will soon be apparent. It will first take a faint violet hue, and in a few hours the whole will have acquired a very deep purple.

Moisten a little magnesia with some of the solution as before, and then dry the mixture in the dark. If it be then submitted to the action of the sun's rays, it will acquire only a faint violet, even by several hours' exposure.

If the mixture employed in the last experiment be now thoroughly wetted with pure water, and again placed within the rays of the sun, its colour will rapidly change, and it will acquire a deep purple approaching to crimson.

Moisten a piece of white riband with the aqueous solution of gold before described, and dry it thoroughly in the dark; then suspend it in a clean, dry, transparent phial, and cork it close with a dry cork. Expose the riband, thus secured, to the strong light of a bright sun, for half an hour, and only a faint appearance of change of colour will be perceived.

Take the riband out of the phial that was employed in the last experiment, and wet it well with distilled water. If it be now exposed to the sun's rays, it will instantly change colour, and will quickly be stained of an indelible purple.

On Dying and Calico-printing.

Pour a little solution of indigo in sulphuric acid into a glass of water, and add about an equal quantity of solution of carbonate of potash. If a piece of white cloth be dipped in this mixture, it will come out a blue. If a piece of yellow cloth be dipped in, it will become a green, or a red will be converted to a purple. A slip of blue litmus paper immersed in it will immediately become red.

If a little fustic, quercitron bark, or other dye, be boiled in water, the colouring matter will be extracted, and a coloured solution formed. On adding a small quantity of dissolved alum to this decoction, the alumina, or base of the salt, will attract the colouring matter, forming an insoluble compound, which in a short time will subside and may easily be separated.

Boil a little cochineal in water, with a grain or two of cream of tartar, and a dull kind of crimson solution will be formed. By the addition of a few drops of nitro-muriate of tin, the colouring matter will be precipitated of a beautiful scarlet. This and some of the former instances will give the student a tolerably correct idea of the general process of dying woollen cloths.

If a few strips of dyed linen cloth, of different colours, be dipped into a phial of oxymuriatic acid, the colours will be quickly discharged; for there are few colours that can resist the energetic effect of this acid. This experiment may be considered as a complete example of the process of bleaching coloured goods.

Having found a piece of blue linen cloth, that will bleach in oxygenised muriatic acid, dip the tip of the finger in a solution of muriate of tin, and press it

while wet with the solution upon a strip of this cloth. After an interval of a few minutes, immerse the cloth in a phial of liquid oxymuriatic acid, and when it has remained in it the usual time, it will be found that the spot which was previously wet with muriate of tin has preserved its original colour, while the rest of the cloth has become white.

Dip a piece of white calico in a strong solution of acetate of iron; dry it by the fire, and lay it aside for three or four days. After this, wash it well in hot water, and then dye it black by boiling it for ten minutes in a strong decoction of Brazil wood. If the cloth be now dried, any figures printed upon it with a colourless solution of muriate of tin, will appear of a beautiful scarlet, although the ground will remain a permanent black.

Boil equal parts of arnotto and common potash in water till the whole are dissolved. This will produce the pale reddish buff so much in use, and sold under the name of nankeen dye.

(To be continued.)

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 27.

FUNCTIONS OF THE NERVOUS SYSTEM.

A still more remarkable case is that in which paroxysms of hysterical convulsion, in themselves beyond the power of the will to excite or control, are brought on by a voluntary effort, which seems to act by getting up the state of feeling which is the immediate cause of the disordered movements. In all these instances, and others of like nature, it would seem as if the agency of the cerebrum produced the same condition in the sensory ganglia and their motor fibres, as that which is more directly excited by sensations received through their own afferent nerves. It may be reasonably surmised, then, that the sensory ganglia, like the cephalic ganglia, which are the instruments of the instinctive actions of the lower animals, can only be excited to action by stimuli immediately operating upon them; but that these stimuli may be either sensations directly originating in external objects, or conceptions resulting from the impressions left by those objects, of which there is strong reason to believe that the cerebrum is the storehouse. The emotions are concerned in man, however, in many actions which are, in themselves, strictly voluntary. Unless they be so strongly excited as to get the better of the will, they do not operate downwards upon the motor system, but upwards upon the cerebral; supplying the chief *motives* by which the voluntary determinations are guided.

The faculty of *memory* appears to depend upon the instrumentality of the cerebral hemispheres; impressions made upon the organs of sense not being remembered, unless they are at once registered in this part of the nervous centres. This faculty is one of those first awakened in the opening mind of the infant, and it is one in which we find traces in animals, that seem to be otherwise governed by pure instinct. It obviously affords the first step towards the exercise of the reasoning powers, since no *experience* can be obtained without it; and the foundation of all the intelligent adaptation of means to ends lies in the application of the knowledge which has been acquired and stored up in the mind. There is strong reason to believe that no impression of this kind, once made upon the cerebrum, is ever entirely lost, except through disease or accident, which will frequently destroy the memory altogether, or will annihilate the recollection of some particular class of objects or of words. All memory, however, seems to depend upon the principle of suggestion, one idea being linked with another, or with a particular sensation, in such a manner as to be called up by its recurrence; and a period of many years frequently intervening without that combination of circumstances presenting itself which is requisite to arouse the dormant impression of some early event. Sometimes this combination occurs in dreaming, delirium, or insanity; and ideas are recalled, of which the mind, in a state of healthy activity, has no remembrance. It is upon the ideas aroused in the mind by sensorial changes, or recalled by *conception*, or evolved by the process of *reflection* (in which the mind perceives its own operations, and traces relations

amongst its objects of thought), or generated by the imagination (which really acts, however, by combining into new forms than by creating altogether new), that all acts of *reasoning* are based. These consist, for the most part, in the aggregation and collocation of ideas, the decomposition of complex ideas into more simple ones, and the combination of simple ideas into general expressions; in which are exercised the faculty of *comparison*, by which the relations and connections of ideas are perceived; that of abstraction, by which we fix our attention on any particular qualities of the object of our thought, and isolate it from the rest; and that of generalisation, by which we grasp in our minds some definite notions in regard to the general relations of those objects. These are the processes chiefly concerned in the simple acquirements of knowledge, with which class of operations the emotional part of our nature has very little participation. But in those modes of exercise of our reasoning powers, which are chiefly concerned in the determination of our actions, the emotions, &c., are largely concerned. They chiefly, if not solely, act upon the reasoning powers by modifying the form in which the ideas are presented to the mind; whether these ideas are directly excited by external sensations, or whether they are called up by an act of the memory, or result from the exercise of the imagination. For, as they essentially consist of feelings of pleasure and pain, connected with certain classes of ideas, the former produce a desire of the objects to which they relate; the latter a repugnance to them. They thus have a most important influence upon the *judgment* which is formed by the comparison of certain kinds of ideas; and they may, consequently, modify the volitional determination, or act of the will, which is consequent upon this, and which may either be directed towards the further operations of the mind itself, or may exert an immediate influence on the bodily frame by the agency of the nervous system. In either case it is the characteristic distinction of a volitional operation that *means are intentionally adapted to ends*, in accordance with the belief of the mind as to their mutual relations. Upon the correctness of that decision will depend the power of the action to accomplish what the mind had in view.

Although physiologists have been accustomed to regard the will as *directly determining* all those muscular movements which are usually distinguished as voluntary; yet a careful analysis of the process fully bears out the inferences which might be erected upon the considerations already advanced—that the influence of the will is *not* directly conveyed to the muscles by fibres beginning in the cerebral convolutions, and proceeding to the muscles, but that it is exerted through the automatic centres; for it has been shown that these automatic centres (the sensory ganglia, the medulla oblongata, and spinal chord) receive all the sensory nerves, and give origin to all the motor; and that the fibres which pass between the cerebral convolutions and the sensory ganglia, probably serve merely to bring these centres into mutual relation, and are not continuous with those of any nerves, either sensory or motor.

Now, every one who has attentively considered the nature of what we are accustomed to call *voluntary* action, has been struck by the fact that the will simply determines the *result*, not the special movements by which that result is brought about. If it were otherwise, we should be dependant upon our anatomical knowledge for our power of performing even the simplest movements of the body. Again, there are very few cases in which we can single out any individual muscle, and put it in action independently of others; and the cases in which we *can* do so are those in which a single muscle is concerned in producing the result—as in the elevation of the eyelid; and we then really single out the muscle by willing the result. Thus, then, however startling the position may first appear, we have a right to affirm that the will cannot exert any direct or immediate power over the muscles, but that its determinations are carried into effect through an intermediate mechanism which, without any further guidance on our own parts, selects and combines the particular muscles, whose contractions are requisite to produce the desired movement. We have seen that the sensorium (or collection of sensory ganglia) *plays* upon the cerebrum, sending to it sensations whereby its peculiar activity, as an instrument of purely

mental operations, is called forth; and, in return, the cerebrum appears to play downwards upon the motor portion of the automatic apparatus, sending it volitional impulses which excite its motorial activity; and hence it follows that *all* the movements which are performed by the instrumentality of the cerebro-spinal nervous system, are, in themselves, *automatic;* and that the peculiarity in their character, whether reflex, instinctive, emotional, or voluntary, is due to the speciality of the source and seat of the impulses which respectively originate them.

LOBELIA.

A CASE IN POINT.

Mr. Jas. Gamwell, mechanical draughtsman, a middle-aged man, of strictly temperate and regular habits, has been for many years subject to occasional severe bilious attacks, accompanied with distressing headache and loss of appetite. Owing to the sedentary nature of his occupation, these attacks have been of frequent occurrence, and have usually rendered him unable to attend to business for several days together. Some time ago the family doctor sounded him, and very much alarmed him by saying, if he did not take care of himself, it might end in consumption. He told him that physic would do him very little good, and recommended diet and regimen, and to get a little recreation for a week or two. Feeling anxious, on account of his family, to have further advice, he consulted a physician, who also sounded him. "Why," said he, "there is nothing the matter with your lungs; they are as sound as mine; it is your stomach that is wrong." He prescribed for the patient; the medicine purged him, and made him very weak; but as the original distressing symptoms vanished, he believed himself cured, and returned to his employment. Since then he has, however, had many severe attacks; and, as he could not afford to be constantly paying physicians' fees, and being decidedly averse to frequent purgings, he adopted the following course of treatment, viz., total abstinence from all kinds of food; and as soon as the disorder had reached its height, as he terms it, indicated by an intolerable headache, sickness, and great prostration of strength, he took a quantity of mustard in water, which sometimes acted as an emetic, and relieved him; after which he would gradually recover: sometimes, however, the mustard would not operate, and he would feel much worse; until at length nature would herself overcome the difficulty, aided only by total abstinence from food for a day or two. A few weeks ago Mr. Gamwell had one of his usual attacks, and had recourse to his usual course of treatment, without success. Perceiving that he was unwell, I questioned him, and found that, in addition to the headache and stomachic disorder, he was labouring under a slight attack of bronchitis. I recommended a lobelia emetic, but as he had very little faith in herbs, and knew little or nothing about lobelia, he hesitated, and said he would think about it. Finding his mind open to conviction, I lent him the "Guide to Health," and the first three volumes of the Journal, in which there are many articles on lobelia. The next day he was worse, and resolved to try a lobelia emetic. I immediately procured him some of the herb and seed mixed, together with some valerian and composition-powder, and gave him particular instructions how to take it. The next morning he awoke early with a dreadful headache, sickness, cough, and a general feeling of illness. Now, thought he, is the time for action. He rose immediately, had a fire lighted, and some hot water got ready; he then mixed one teaspoonful of lobelia and half a teaspoonful of valerian in a cup of warm water; this he swallowed, and in a few minutes drank a cup of composition-tea. In less than half an hour he vomited a mass of filth, and, to use his own words, "the headache vanished like magic," and he felt a desire to eat—a sensation he had not experienced for some days. Having partaken of some "tea and toast," he went to bed and slept an hour or two; when he awoke he again vomited an enormous quantity of filthy-looking phlegm, and from that moment he felt completely relieved. He arose, and ate a heartier dinner than he had done for a very long time. I then made a decoction of yarrow, horehound, clivers, pennyroyal, and vervain, putting one teaspoonful of cayenne to the pint, of which he took half a wineglassful four times a day (see Journal, vol. 1, page 103), and in three or four days he was quite restored to

his usual health. He continues to read the Journal, &c., which I lend him, and considers lobelia the best thing he ever tried for his complaint, and has fully made up his mind to resort to it in future. I have had three teaspoonfuls of lobelia in my stomach at once, and its action proved most beneficial. This does not at all tally with Dr. Letheby's poisonous dose of thirty grains. I have taken it myself, and given it to others, as an emetic, tincture, pills, boiled with other herbs—in fact, in every way in which it is used—and have never witnessed any deleterious or poisonous effects; on the contrary, I have always found its action most beneficial. I will forward another case or two shortly. RAILTON BROWN.

7, *West Hind-street, Newcastle-on-Tyne.*

I certify the above statement to be correct. J. C. GAMWELL.

MEDICAL EDUCATION.

(*Concluded from page* 114.)

THE whole tenor of Mr. Clift's evidence shows that throughout the long series of years during which the board of curators was quietly waiting for Sir Everard to produce his pretended catalogue, its members evinced moral cowardice of the most culpable kind, while Mr. Clift, the *conservator* (!) not only knew from the beginning the exact nature, extent, and object of the manuscripts, and was thoroughly aware that Sir Everard was using those manuscripts "for his own special purposes" for twenty-three years, but actually aided him in doing so by making transcripts both of the MSS. and drawings for him. He states that during the whole period, from 1800 to 1823, "Sir Everard was so intent on writing papers for the 'Philosophical Transactions,' that very little else, in the way of the collection, was thought of by him; because he always made his engagements in this way an excuse to the trustees for not having proceeded with the catalogue."

Thus it appears established beyond the possibility of disproof by admissions extracted from a man while still the *conservator* of the museum in 1834, and while defending himself and his superiors against the imputation of culpable neglect, that they knew from the beginning that Sir Everard Home held the MSS., that they knew generally their nature and purpose, and that they were public property belonging to the museum; that although they acquiesced in Sir Everard Home's retention of them during the enormous period of twenty-three years, they knew he had not even a pretext for keeping them, since he alleged as a plea for not proceeding with the pretended catalogue which he undertook to prepare that all his time was occupied in writing papers for the "Philosophical Transactions;" and that notwithstanding all this knowledge, their irresponsibility as officials of the College enabled them to rest so far supinely indifferent and so deplorably destitute of moral courage as never during all those years to insist on the return of the manuscripts, in order that the catalogue so long needed by zoological and pathological students might be presented to them without further delay. If Mr. Clift had not been a College official when he was examined by the Parliamentary Committee of 1834, but had been free to make "a clean breast of it," there can be little doubt but that the case as against the College authorities would have been far stronger even than it appears now. There was an evident desire to hush the matter up: Mr. Guthrie said to the Committee,—"I believe Sir Everard Home (if we must make a culprit of him after he is dead) destroyed little which was valuable. I do not think there was much of very essential matter destroyed; at least, if there was, we have no positive knowledge of it; and it is now too late to rectify it." As it is certain that if the College authorities had done their duty they would have saved the manuscripts from destruction; not having done so, the president palliates their culpability by asserting that, after all, the disastrous results of it are not great! Let us see: among the manuscripts "were nine folio volumes of dissections of animals—viz., vol. 1, Ruminants; vol. 2, Animals sine cæco; vol. 3, Monkey and its gradations; vol. 4, Lion and its gradations; vol. 5, Scalpris Dentata; vol. 6, Anatomy of Birds; vol. 7, Of the Tricoilia; vol. 8, Anatomy of Fishes; vol. 9, Anatomy of Insects. There was one volume on the Natural History of Vegetables. There were also

a great number of fasciculi *among which*," Mr. Clift mentions the full titles of thirty-three extremely important contributions to comparative and pathological anatomy. The great mass of these writings were elaborate descriptions by Hunter himself of his dissections, investigations, and discoveries, and referred almost exclusively to the numerous preparations in his museum, which were unintelligible and in many instances useless without them.

Such is the result of irresponsibility by authority of State. No reflecting man can deny that many of the pathological specimens can never be properly understood without the history of the cases of the patients from whom they were taken. If the exclusive powers delegated to the college by Government, and constituting its council irresponsible, had not prevented the members of that college from assuming the control of its own affairs, they would have taken care that the precious materials above named should not have remained twenty-three years in the hands of a man who admitted that he was not using them for the purpose for which he was presumed to hold them, while the numerous visitors to the museum were unable to profit by it from want of guidance, which those manuscripts alone could effectually supply.

A few words concerning Sir Everard Home must close our account of, to use Mr. Lawrence's words, "this deplorable transaction." He devoted the twenty-three years, during which he kept his brother-in-law's manuscripts, to the assiduous labour of robbing him of his dearly earned fame. He has been a larger contributor than any other man to the Philosophical transactions: the material of those contributions were Hunter's voluminous manuscripts bequeathed to him "upon trust," to be offered to the Government, and which were public property, or on the very eve of becoming so, at the time they were taken to his house. He also compiled from them two volumes on Comparative Anatomy, which he issued in his own name; and having received from the printers the last proof of the last volume, he then burnt the original materials which he had used. He took possession of the manuscripts on false pretences: he told Mr. Clift "that those papers—being, a very large proportion of them, loose fasciculi—were not fit for the public eye; and therefore he should take them into his keeping for the purpose of using them in describing the collection." When, in 1816, it was proposed that all the curators should become joint labourers in drawing up the descriptive catalogue, "he declared that it was his special duty, and that he would admit of no participation in its performance." But though he gave no sign of fulfilling his "special duty" as a curator, the trustees allowed him to retain the MSS.; and in 1817 he increased his power over them by being made a trustee himself! He then resigned his curatorship; and Mr. Clift was deputed to make the catalogue. Although this gentleman admits that from the time "when the manuscripts were first removed," it "frequently" occurred to him that "it would be necessary to have recourse to them in order to make a complete description" of the museum of which he was conservator, he never even requested the use of them; and the knowledge of their fate was volunteered by Sir Everard Home himself. "He began," says Mr. Clift, "by telling me that his house had been nearly on fire—that the engines came, and the firemen insisted on taking possession of his house. They saw the flames coming out of the chimney. He did not wish to admit them, but they insisted on being admitted. I asked him how it happened; and then he told me that it was in burning those manuscripts of Mr. Hunter. I said to him, 'I hope, Sir Everard, you have not destroyed those ten volumes relating to the gallery.' He said 'Yes.' 'And Mr. Hunter's lectures?' 'Yes.' And then I mentioned perhaps twenty others that I had a very perfect recollection of. . . . . When I had made inquiry respecting the principal of them, and he told me they were all gone, I said to him, 'Well, Sir Everard, there is only one thing more to do.' He said, 'What is that?' I said, 'To burn the collection,'" on which the Government had expended £42,500! About a tenth part of the whole manuscripts escaped destruction, and were recovered to the Museum. He alleged to his co-trustees that he had destroyed the manuscripts "according to a promise he had made to

Mr. Hunter." Subsequently he told Mr. Clift that the directions to destroy them were given to him by Mr. Hunter "at the time of his death, when he was dying." This was impossible: Mr. Clift was the member of Hunter's family who last saw him alive, and proved that Sir Everard Home was not present. On the 16th October, 1793, Hunter was as usual at St. George's Hospital, when, meeting with some vexatious circumstances, he put a constraint upon himself to conceal his resentment, and in that state went into another room, where he immediately fell dead in the arms of Dr. Robertson, one of the physicians to the hospital. No legal proceedings were instituted against Sir Everard Home: he was allowed to remain on the Board of Examiners, and to continue a trustee of the Museum; his reputation on the Continent, to this day, surpasses, we believe, that of Hunter, and his bust, we are informed, still honours, or disgraces, the Royal College of Surgeons.

Reviewing the evidence now given, we see that the tendency of the Charters and Acts of Parliament in favour of medical and surgical corporations has been to create a monopoly of teaching,—to suppress provincial and private schools,—to confer superior medical and surgical rank without securing the presence of corresponding professional attainments,—to divide the profession into sections, which ought to remain united, while hindering its spontaneous organisation into orders of merit,—to induce in the examining bodies a competition downwards, instead of upwards,—to induce the public acceptance of men as medical practitioners who have studied surgery only,—to induce the public to forego its duty of judging of the fitness of medical men,—to discourage preliminary education by enforcing apprenticeship,—to impede medical study, and to induce a low moral tone both in teachers and pupils by the certificate system,—to make medical education far more costly than it need be,—to maintain a large number of mediocre teachers, and to suppress those who, by nature and culture, are peculiarly qualified for the task,—to induce a reliance on routine rather than on examinations for ensuring a sound education,—and, finally, to oppose all reforms initiated by the constituents of the several corporations, thus recognising the principle of irresponsibility, with its attendant evils, one of which was the destruction of the Hunterian Manuscripts. We can now appreciate the reform which Parliament is called upon to enact: the proposed Medical Council will centralise and consolidate the power of the Corporations; while the 20,000 constituents of the profession, who by their struggles have extorted whatever improvements have hitherto been effected, are still to be denied a voice in the constitution and administration of their own government, in the education of their own members, and in the appropriation of their own funds! The alleged advantage of this despotism is, that it will secure an uniform minimum education, a right to practise throughout the United Kingdom, and a registration of qualifications. The first would, as we have shown, be a great evil; the second now virtually exists, and would do so legally if the State would withdraw its present protection; and the third is accomplished by the Medical Directories, which are everywhere obtainable for a few shillings.

LECTURES ON MEDICAL BOTANY.

Dr. Coffin's last two lectures drew large audiences, who most attentively entered into the merits of our invaluable system, and marked their approbation with repeated applause. The Lectures will be continued every Tuesday evening till the course is completed.

Dr. Coffin may be *consulted*, *gratis*, at his Agent's, Mr. Bean, 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street, every Thursday morning, from ten to one o'clock.

PHYSIOLOGY OF MAN.

If the practices of savage and barbarous people are to be the criterion, we must deem it natural to eat earth. "The Ottomaques," says Humboldt, "on the banks of the Meta and the Orinoco, feed on a fat, unctuous earth, or a species of pipe-clay, tinged with a little oxide of iron. They collect this clay very carefully, distinguishing it by the taste: they knead it into balls of four or six inches in diameter,

which they bake slightly before a slow fire. Whole stacks of such provisions are seen piled up in their huts. These clods are soaked in water, when about to be used; and each individual eats about a pound of the material every day. The only addition, which they occasionally make to this unnatural fare, consists in small fish, lizards, and fern-roots. The quantity of clay that the Ottomaques consume, and the greediness with which they devour it, seem to prove that it does more than merely distend their hungry stomachs, and that the organs of digestion have the power of extracting from it something convertible into animal substance."

The same practice has been observed in other places.

Is it a just point of view to regard the savage state exclusively as the state of nature? Is civilisation to be considered as opposed to and incompatible with the nature of man?

A power of improvement, of advancement in arts and sciences (that is, the capability of civilisation, or perfectibility, as it has sometimes been called), is recognised in all human beings: its degree is very various in individuals and races. All have lived in society, which strongly tends to promote and assist the development of this power. Social life and progressive civilisation, instead of being unnatural to man, are therefore parts, and very valuable parts of his nature, as much as the erect stature and speech: as much as ferocity and solitary life are the nature of predacious animals, or mildness and herding together are of many herbivorous ones. It is as much the nature of man to form societies, to build up political associations, to cultivate arts and sciences, to spread himself over the globe, and avail himself of both organised kingdoms for his support, as it is that of the bee and ant to establish their communities, to gather honey and lay up provisions, or that of any other animals to perform the actions by which they are respectively characterised.

These considerations lead to the conclusion, that progressive advance and development, and the employment of all kinds of food, are as natural to man, as stationary uniformity and restriction to one species of aliment are to any animals.

In discussing this question, we sometimes meet with positions respecting the influence of animal or vegetable diet on the development of the bodily and mental powers, which are quite unsupported by direct proof: and some have even sought for a support to their systems in the fictions of poetry.

"The Pythagorean diet," says Buffon, "though extolled by ancient and modern philosophers, and even recommended by certain physicians, was never indicated by nature. If man were obliged to abstain totally from flesh, he would not, at least in our climates, either exist or multiply. An entire abstinence from flesh can have no effect but to enfeeble nature. To preserve himself in proper plight, man requires not only the use of this solid nourishment, but even to vary it. To obtain complete vigour, he must choose that species of food which is most agreeable to his constitution; and, as he cannot preserve himself in a state of activity, but by procuring new sensations, he must give his senses their full stretch, and eat a variety of meats, to prevent the disgust arising from an uniformity of nourishment."

We are told, on the other hand, that in the golden age man was as innocent as the dove; his food was acorns; and his beverage pure water from the fountain. Finding everywhere abundant subsistence, he felt no anxieties, but lived independent, and always in peace, both with his own species and the other animals. But he no sooner forgot his native dignity, and sacrificed his liberty to the bonds of society, than war and the iron age succeeded that of gold and of peace. Cruelty and an insatiable appetite for flesh and blood were the first-fruits of a depraved nature, the corruption of which was completed by the invention of manners, arts, and sciences. Either immediately, or remotely, all the physical and moral evil, by which individuals are afflicted, and society laid waste, arose from these carnivorous practices.

Both these representations are contradicted by the only criterion in such questions—an appeal to experience. That animal food renders man strong and

courageous is fully disproved by the inhabitants of northern Europe and Asia, the Laplanders, Samoiedes, Ostiacs, Tungooses, Burats, and Kamtschadales, as well as by the Esquimaux in the northern, and the natives of Tierra del Fuego in the southern extremity of America; which are the smallest, weakest, and least brave people of the globe, although they live almost entirely on flesh, and that often raw.

Vegetable diet is as little connected with weakness and cowardice as that of animal matters is with physical force and courage. That men can be perfectly nourished, and their bodily and mental capabilities be fully developed in any climates by a diet purely vegetable, admits of abundant proof from experience. In the periods of their greatest simplicity, manliness, and bravery, the Greeks and Romans appear to have lived almost entirely on plain vegetable preparations; indifferent bread, fruits, and other produce of the earth, are the chief nourishment of the modern Italians, and of the mass of the population in most countries of Europe: of those more immediately known to ourselves, the Irish and Scotch may be mentioned, who are certainly not rendered weaker than their English fellow-subjects by their freer use of vegetable aliment. The Negroes, whose great bodily powers are well known, feed chiefly on vegetable substances; and the same is the case with the South-Sea Islanders, whose agility and strength were so great, that the stoutest and most expert English sailors had no chance with them in wrestling and boxing.

The representations of the Pythagoreans respecting the noxious and debilitating effects of animal food are, on the other hand, the mere offspring of imagination. We have not the shadow of a proof, unless we admit Ovid's Metamorphoses and other poetical compositions, that this state of innocence, of exalted temperance, of entire abstinence from flesh, of perfect tranquillity, of profound peace, ever existed, or that it is more than a fable, designed to convey moral instruction. If the experience of every individual were not sufficient to convince him that the use of animal food is quite consistent with the greatest strength of body and most exalted energy of mind, this truth is proclaimed by the voice of all history. A few hundreds of Europeans hold in bondage the vegetable-eating millions of the East. If the Romans, in their earliest state, employed a simple vegetable diet, their glorious career went on uninterruptedly after they had become more carnivorous: we see them winning their way, from a beginning so inconsiderable, that it is lost in the obscurity of fable, to the empire of the world: we see them, by the power of intellect, establishing that dominion which they had acquired by the sword, and producing such compositions in poetry, oratory, philosophy, and history, as are at once the admiration and despair of succeeding ages: we see our own countrymen rivalling them in arts and in arms, exhibiting no less signal bravery in the field and on the ocean; and displaying in a Milton and Shakspeare, in a Newton, Bacon, and Locke, in a Chatham, Erskine, and Fox, no less mental energy. Yet, with these proofs before their eyes, men are actually found, who would have us believe, on the faith of some insulated, exaggerated, and misrepresented facts, and still more miserable hypothesis, that the development, form, and powers of the body are impaired and lessened, and the intellectual and moral faculties injured and perverted, by animal food.

On this subject of diet a question naturally presents itself. Whether man approaches most nearly to the carnivorous or herbivorous tribes in his structure? What kind of food should we assign to him, if we judged from his organisation merely, and the analogy it presents to that of other mammalia? Physiologists have usually represented that our species hold a middle rank, in the masticatory and digestive apparatus, between the flesh-eating and the herbivorous animals—a statement which seems rather to have been deduced from what we have learned by experience on the subject, than to result fairly from an actual comparison of man and animals.

The molar teeth, being the instruments employed in dividing and preparing the food, must exhibit, in figure and construction, a relation to the nature of the aliment. They rise, in the true carnivora, into sharp-pointed prominences; and

those of the lower shut within those of the upper jaw; when the series is viewed together, the general outline may be compared to the teeth of a saw. These animals are also furnished with long, pointed, and strong cuspidati or canine teeth, which are employed as weapons of offence and defence, and are very serviceable in seizing and lacerating their prey: they constitute in some animals, as the lion, tiger, &c., very formidable weapons. The herbivorous animals are not armed with these terrible canine teeth: their molares have broad, flat surfaces, opposed in a vertical line to each other in the two jaws. Plates of enamel are intermixed with the bone of the tooth in the latter; and, as its superior hardness makes it wear less rapidly than the other textures of the teeth, it appears on the grinding surface in rising ridges, which must greatly increase the triturating effect. In carnivorous animals the enamel is confined altogether to the surface of the teeth.

The articulation of the lower jaw differs in the two cases as much as the structure of the teeth. In the carnivora it can only move backwards and forwards; all lateral motion being precluded by rising edges of the glenoid cavity: in the herbivora it has, moreover, motion from side to side. Thus we observe, in the flesh-eaters, teeth calculated only for tearing, subservient, in part at least, to the procuring of food, as well as to purposes of defence; and an articulation of the lower jaw, that precludes all lateral motion. In those which live on vegetables, the form of the teeth and the nature of the joint are calculated for the lateral or grinding motion. The former, having rudely torn and divided the food, swallow it in masses, while in the latter it undergoes considerable comminution before it is swallowed. The teeth of man have not the slightest resemblance to those of the carnivorous animals, except that their enamel is confined to the external surface. He possesses, indeed, teeth called canine, but they do not exceed the level of the others, and are obviously unsuited to the purposes which the corresponding teeth execute in carnivorous animals. The obtuse tubercles of the human molares have not the most remote resemblance to the pointed projections of these teeth in carnivorous animals; they are as clearly distinguished from the flat crowns with intermixed enamel of the herbivorous molares. In the freedom of lateral motion, however, the human inferior maxilla more nearly resembles that of the herbivora.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 120.)

Dissolve four drachms of sulphate of iron in one pint of cold water, then add about six drachms of lime in powder, and two drachms of finely pulverised indigo, stirring the mixture occasionally for twelve or fourteen hours. If a piece of white calico be immersed in this solution for a few minutes, it will be dyed green; and by exposure to the atmosphere only for a few seconds, this will be converted to a permanent blue.

If a piece of calico be immersed in a solution of sulphate of iron, and when dry, washed in a weak solution of carbonate of potash, a permanent colour will be produced, viz., the buff of the calico-printers.

If muriate of tin, newly made, be added to a solution of indigo in sulphuric acid, the oxygen of the indigo will be absorbed, and the solution instantly converted to a green. It is on the same principle that muriate of tin is employed in cleansing discoloured leather furniture, as it absorbs the oxygen, and the leather is restored to its natural colour.

Take a piece of very dark olive-coloured linen that has been dyed with iron and quercitron bark, or weld, and spot it in several places with a colourless solution of muriate of tin. Wherever the cloth has been touched with this solution, the original colour will be discharged, and spots of a bright yellow will appear in its stead.

Dip a piece of white calico in a cold solution of sulphate of iron, and suffer it to become entirely dry. Then imprint any figures upon it with a strong solution of colourless citric acid, and allow this also to dry. If the piece be then well washed in pure warm water, and afterwards boiled in a decoction of logwood, the ground will be dyed either of a slate or black colour, according to the strength of the metallic solution, while the printed

figures will remain beautifully white. This experiment is designed to show the effect of acids in discharging vegetable colours.

If lemon-juice be dropped upon any kind of buff colour, the dye will be instantly discharged. The application of this acid, by means of the block, is another method by which calico-printers give the white spots or figures to piece-goods. The crystallised acid is generally used for this purpose.

These few experiments will give the student some idea of the nature of calico-printing.

On Combustion and Detonation.

Spread a piece of tinfoil, such as is used for coating electrical jars, upon a piece of thick paper; spread some powdered crystals of nitrate of copper upon it, and sprinkle it with water. Fold it up quickly, and wrap it round carefully with the paper, more effectually to exclude the atmospheric air. Place it then upon a tile, and in a short time combustion will commence, and the tin will inflame.

Take three parts of nitre, two of potash, and one of sulphur; all of these should be thoroughly dry; then mix them by rubbing them together in a warm mortar: the resulting compound is called fulminating powder. If a little of this powder be placed upon a fire-shovel over a hot fire, it gradually blackens, and at last melts. At that instant it explodes with a violent report. Note—This mixture is not dangerous, like the metallic fulminating powders, none of which should be intrusted in the hands of young people.

If a few pounds of a mixture of iron filings and sulphur be made into paste with water, and buried in the ground for a few hours, the water will be decomposed with so much rapidity, that combustion and flame will be the consequence.

Put a little fresh-calcined magnesia in a tea-cup upon the hearth, and suddenly pour over it as much concentrated sulphuric acid as will cover the magnesia. In an instant sparks will be thrown out, and the mixture will be completely ignited.

Make a little charcoal perfectly dry, pulverise it very fine, and put it into a warm tea-cup. If some strong nitrous acid be now poured upon it, combustion and inflammation will immediately ensue.

If strong nitrous acid be poured upon a small quantity of a mixture of oxymuriate of potash and phosphorus, flashes of fire will be emitted at intervals for a considerable time.

Put a bit of phosphorus into a small phial, then fill it one-third with boiling olive oil, and cork it close. Whenever the stopper is taken out in the night, light will be evolved sufficient to show the hour upon a watch.

Burn a piece of iron wire in a deflagrating jar of oxygen gas. If a lighted wax taper be now let down into the gas, this will burn in it for some time, and then become extinguished. If ignited sulphur be now introduced, this will also burn for a limited time. Lastly, introduce a morsel of phosphorus, and combustion will also follow in like manner. These experiments show the relative combustibility of different substances.

When antimony is heated to whiteness in a crucible, and in this state agitated, in contact with the air, it inflames with a sort of explosion, and presents while burning a very singular kind of white flame, forming what have been formerly called argentine flowers.

When antimony is well fused upon charcoal, and if, at the moment when its surface is not covered with any particle of oxide, we throw it suddenly upon the ground, the globules into which it divides in its fall burn with a very lively flame, throwing out on all sides brilliant sparks, different from that of any other metal.

Mix five or six grains of sulphuret of antimony with half its weight of oxymuriate of potash, and then, if a sudden stroke be given to the mixture, upon a steel anvil, it fulminates with a loud report, emitting, according to Fourcroy, a flame as brilliant and rapid as lightning.

Into a tea-cup, placed upon a hearth, and containing about a table-spoonful of oil of turpentine, pour about half the quantity of strong nitrous acid, previously mixed with a few drops of sulphuric acid. The moment the acids come in contact with the turpentine, heat and flame will be produced. In performing this experiment it is advisable to mix the acids in a phial, to tie the phial to the end of a stick, and, at arm's length, to pour its contents into the oil, as the sudden com-

bustion sometimes occasions a part of the liquids to be thrown out of the vessel.

Pour a little pure water into a small glass tumbler, and put one or two small pieces of phosphuret of lime into it. In a short time flashes of fire will dart from the surface of the water, and terminate in ringlets of smoke, which will ascend in regular succession.

Into an eight-ounce retort pour four ounces of pure water, add a little solution of pure potash, and give it a boiling heat with a lamp. When it boils, drop a small piece of phosphorus into it, and immerse the beak of the retort in a vessel of water. Bubbles of phosphuretted hydrogen gas will issue from the retort, rise through the water, and take fire the moment they come in contact with atmospheric air, somewhat similar to the preceding experiment.

Put thirty grains of phosphorus into a Florence flask, with three or four ounces of water. Place the vessel over a lamp, and give it a boiling heat. Balls of fire will soon be seen to issue from the water, after the manner of an artificial fire-work, attended with the most beautiful coruscations. An experiment to show the extreme inflammability of phosphorus.

Fix a piece of solid phosphorus in a quill, and write with it upon paper. If the paper be now carried into a dark room, the writing will be beautifully luminous.

Pour a little phosphuretted ether upon a lump of sugar, and drop it into a glass of water, a little warm. The surface of the water will soon become luminous, and if it be moved by blowing gently with the mouth, beautiful and brilliant undulations of surface will be produced, exhibiting the appearance of a liquid combustion.

If any part of the body be rubbed with liquid phosphorus, or phosphuretted ether, that part, in a dark room, will appear as though it were on fire, without producing any dangerous effect, or sensation of heat.

Take two grains of oxymuriate or chlorate of potash, and one grain of flowers of sulphur; rub them together in a mortar, and a smart detonating noise will be produced. Continue to rub the mixture hard, and the reports will be frequently repeated, accompanied with vivid flashes of light. If the same mixture be wrapped in paper, laid on an anvil, and smartly struck with a hammer, the report will be as loud as what is usually produced by a pistol.

Take two grains of the oxymuriate or chlorate of potash, and one grain of phosphorus. Treat this mixture as in the last experiment, and very violent detonations will be produced. It is advisable never to exceed the quantity of phosphorus that is prescribed here, and in other similar experiments.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

Uses of the Dandelion.—Its uses are endless; the young leaves blanched make an agreeable and wholesome early salad; and they may be boiled, like cabbages, with salt meat. The French, too, slice the roots and eat them, as well as the leaves, with bread and butter, and tradition says that the inhabitants of Minorca once subsisted for weeks on this plant, when their harvest had been entirely destroyed by insects. The leaves

are ever a favourite and useful article of food in the Vale of Kashmir, where, in spite of the preconceived prejudices we all have to the contrary, dandelions, and other humbler examples of our northern "weeds," do venture to associate themselves with the rose or the jasmine of its eastern soil. On the banks of the Rhine the plant is cultivated as a substitute for coffee, and Dr. Harrison contends that it possesses the fine flavour and substance of the best Mocha coffee, without its injurious principle; and that it promotes sleep when taken at night, instead of banishing it, as coffee does. Mrs. Moodie gives us her experience with dandelion roots, which seems of a most satisfactory nature. She first cut the roots into small pieces, and dried them in the oven until they were brown and crisp as coffee, and in this state they appear to have been eaten. But certain it is that she ground a portion of them, and made a most superior coffee. In some parts of Canada they make an excellent beer of the leaves, in which the saccharine matter they afford forms a substitute for malt, and the bitter flavour serves instead of hops. In medicine, too, it is invaluable.—*Lady Wilkinson's Weeds and Wildflowers.*

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Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

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The subscription was intended for the *Dispensary*, not for the Hospital. The error is attributable to the hurry in which our printer went to press with the Journal.

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J. R.—Your suggestions are under consideration.

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THE GLEANER, No. 28.

FUNCTIONS OF THE NERVOUS SYSTEM.

The nerves of the *sympathetic* system possess a certain degree of power of exciting muscular contractions in the various parts to which they are distributed. Thus, by irritating them immediately after the death of an animal, contractions may be excited in any part of the alimentary canal, from the pharynx to the rectum, according to the trunks which are irritated; in the heart, after its ordinary movements have ceased, in the aorta, vena cava and thoracic duct; in the ductus, choledochus, uterus, Fallopian tubes, vas deferens and vesiculæ seminales. But the very same contractions may be excited by irritating the roots of the spinal nerves, from which the sympathetic trunks receive their white fibres; and there is, consequently, strong reason to believe that the *motor* power of the latter is entirely dependant upon the cerebro-spinal system. Whatever *sensory* endowments the sympathetic trunks possess, are probably to be referred to the same connection. In the ordinary condition of the body these are not manifested.

The parts exclusively supplied by sympathetic trunks do not appear to be in the least degree sensible; and no sign of pain is given when the sympathetic trunks themselves are irritated. But in certain diseased conditions of these organs, violent pains are felt in them; and these pains can only be produced through the medium of fibres communicating with the sensorium, through the spinal nerves. It is difficult to speak with any precision as to the functions of the sympathetic system. There is much reason to believe, however, that it constitutes the channel through which the passions and emotions of the mind affect the organic functions; and this especially through its power of regulating the *calibre* of the arteries. We have examples of the influence of these states upon the circulation, in the palpitation of the heart, which is produced by an agitated state of feeling; in the syncope, or suspension of the heart's action, which sometimes comes on from a sudden shock; in the acts of blushing and turning pale, which consist in the dilatation and contraction of the small arteries; in the sudden increase of the salivary, lachrymal and mammary secretions, under the influnce of particular states of mind, which increase is probably due to the temporary dilatation of the arteries that supply the glands, as in the acts of blushing and turning pale, and in many other phenomena. It is probable that the sympathetic system not only thus brings the organic functions into relation with the animal, but that it also tends to harmonise the former with each other, so as to bring the various acts of secretion, nutrition, &c., into mutual conformity. Of the distinctive function of the gray or organic fibres, we have no certain knowledge; but they not improbably may have some direct influence upon the chemical processes which are involved in these changes, and may thus affect the *quality* of the secretions; whilst the office of the white fibres is rather to regulate the diameter of the blood-vessels supplying the glands, and thus to determine the quantity of their products.

GENERAL SUMMARY,

From the lowest of the vegetable kingdom to the highest of the vertebrated.

The movements occasionally exhibited in the vegetable kingdom do not imply the existence, in its members, of consciousness or of a guiding will, being merely dependant upon that property of *contractility* upon the application of a stimulus, which may be regarded as due to the peculiar manner in which the elements of the contractile tissues are combined and arranged. Hence vegetables may be considered as peculiarly, though not entirely, constituting the *kingdom of organic life.*

In immediate connection with the lowest of the vegetable kingdom, are the lowest of the animal tribes, the *protozoa* and lower radiata. Here we see indications of the same simple contractility which plants enjoy; but this has a more important relation to the well-being of the individual, and forms a more prominent part of its vital actions.

In addition to the motions thus produced, we witness others in the higher *radiata* and in the lower *articulata* and *molusca*, which are consequent upon impressions made on distant parts and transmitted through the nervous system, and some, even, which seem to be performed under the guidance of sensation, although none which clearly evince intelligence and design on the part of the animals themselves. Proceeding still further, we observe these *instinctive* movements becoming more complex in their character, and more refined and special in their objects, until we arrive at the class of *insects*, which seem to possess the highest development of the instinctive faculties of any known animals. But we do not find *intelligence* by any means increasing in the same ratio; on the contrary, it remains very low, and its power of modifying the dictates of instinct, when these happen (from particular causes) to be erroneous, is very slight. If we further inquire in what orders of insects this power is most strikingly manifested, we shall have little hesitation in fixing upon the *hymenoptera* and *neuroptera*, which include the bee, wasp, ant, white ant, and other social insects. Now it is not a little remarkable that insects should, of all classes of animals, be most distinguished for *locomotive* power (as compared with their size), and that of all insects the hymenoptera and neuroptera possess this power in the highest degree. It is evident that the higher kinds of instinctive actions, including the peculiar endowments of the nervous and muscular systems just referred to, have for their object the maintenance of *animal* life, as distinguished on the one hand from the mere *organic* life of vegetables, and from the mental or psychical life of higher beings on the other. Hence we should regard insects, and especially the hymenoptera and neuroptera, as typical of the *kingdom of animal life.* In this we find the movements which are produced by the direct contractility of the tissues stimulated, bearing a smaller and still smaller proportion to the whole; and at last restricted merely to the parts immediately concerned in the maintenance of the organic functions with which they alway remain associated. Ascending from the articulated through the *vertebrated* series, we observe a gradually increasing development of the reasoning powers or intelligence, and a gradual fading away of the instincts, which become subordinate to the higher mental faculties A comparison between the habits of birds and those of insects will put this in a striking light. Several points of correspondence exist between these two classes, indicating that they hold a corresponding rank in their respective subkingdoms. But, whilst all the actions of insects appear to be under the guidance of pure, unvarying instinct, those of birds, whilst evidently prompted by similar impulses, are yet capable of great modification in each individual (according to the peculiar circumstances in which it may happen to be placed), by the influence of its reasoning faculties. Ascending to man, we find the pure instincts so completely subordinated to the higher psychical faculties, that it is only when the latter are yet dormant, as in infancy, or undeveloped, as in complete idiocy, that their uncontrolled operation is witnessed. It is easy to see the final cause for this change.

If the organisation of the human system had been adapted to perform all the

actions necessary for the continued maintenance of its existence, with the same certainty and freedom from voluntary effort as we perceive where pure instinct is the governing principle—and if all man's sensations had given rise to intuitive perceptions, instead of those perceptions being acquired by the exercise of his mind, it is evident that external circumstances would have created no stimulus to the improvement of his intellectual powers, and that the strength of his instinctive propensities would have diminished the freedom of his moral agency. Although, therefore, to all the actions immediately necessary for the maintenance of his own existence, and for the continuance of his race, a powerful instinct strongly impels him, these propensities could not be gratified, if the means were not provided by the exercise of the mental powers which he enjoys in a degree far exceeding those of any other terrestrial being.

(To be continued.)

DIPHTHERIA.

This old disease, with a new and more virulent and dangerous phase, has become so alarmingly prevalent that we trust our notice of it will be hailed with satisfaction.

SYMPTOMS.

Diphtheria is a disease of the throat and pharynx. It commences with a spot generally on the tonsils, which spot quickly assumes a brown appearance, ulcerates and spreads on, behind and before the tonsils, which are much swelled. Sloughing then takes place, destroying the mucous membrane, producing also much phlegm, and a swelling of the parts externally. It is also attended with low fever of the typhoid form; and without proper treatment the sufferer dies in a few days.

TREATMENT.

First, give a dose or two of composition-powder; after which, give a vapour-bath. Continue the perspiration gently in bed, and, if necessary, give a lobelia inflata emetic; keep the bowels gently open; gargle with a myrrh or cayenne gargle, and by all means keep the patient's system up by the most nourishing and strengthening diet, such as soups, jellies, &c. Use nothing depletory or lowering; and apply slippery elm poultices to the throat externally.

When the symptoms are abated, the patient out of danger and recovering, assist nature to expel the disease, by giving our tonic herbal medicines to restore the patient to pristine health.

CORONER'S INQUEST.

TO A. I. COFFIN, ESQ. M.D.

Dear Sir.—As we are constant readers of your Medical Reformer, and have derived therefrom much instruction, we feel that many of your readers, taking an interest in "medical reform," will see the necessity of it under the following circumstances which have recently occurred. You may, perhaps, not be aware that in some of the Welsh iron-works, the workmen who are employed by the month, pay a fixed poundage to a fund called "Medical and School Fund." A surgeon is appointed by the proprietors of the works, and not by the men themselves, although they pay him.

It often happens, that under these circumstances, there are numerous instances where poor workmen feel the effect of indirect neglect, and without the power of redressing their wrongs! For instance, a man injures his fingers; calls at the surgery, and is ordered to go home and poultice it with bread and water, when at that time he has often bread scarcely sufficient for his family. Another calls with a sore eye, and is told to poultice it with bread and water. Another has sprained his foot; he is also told to poultice it with bread and water.

Poultices are so indiscriminately prescribed, that the healing properties of bread and water appear marvellous. This is only one very common occurrence, but there are numerous other tricks used to get rid of, or terrify patients: cupping, for instance, or a blister, will often have the desired effect.

What is one of the many results of this system of treating sick people? Some of the more intelligent think for themselves, read medical publications, among which, your valuable works, in which the treatment of disease is so ably, and at the same time familiarly set forth, and by information derived from books and their

every-day experience, discover that the science of medicine is not so deeply involved in mystery as they are taught to believe.

At an inquest held on the 7th inst., at Abersychan, the system of medical tyranny was very remarkably exemplified.

It appears that a person named James Rogers died on Friday evening, 4th inst. The surgeon who attended him refused to give a certificate for burial. A Coroner's inquest was the result; one of the druggists of the village was the foreman and another "raw beginner," a reporter for the press. The jury were summoned by the sergeant of police. Upon one of the jury being sworn (who it appears was by profession an analytical chemist, and consequently knew too much of the properties of substances employed in medicine to suit the purposes of the surgeon or the vender of drugs), the surgeon objected upon the grounds that he was his enemy! From inquiries we made we find that he appears to be his enemy in consequence of his being dissatisfied with him as a medical man, and having therefore called in a more competent person. The evidence of the said medical man, who had made himself so unenviably conspicuous, was to the effect that the man "died from natural causes" (then why an inquest?); that he had attended him, the man getting worse, until the Saturday before his death. The Monday following he stated he saw him in a worse state, and he continued to get worse till he died on the Friday evening following. Now it appears there is a society of young men who relieve the sufferings of the sick as much as lies in their power, especially in cases of neglect, &c. This sick man, feeling himself getting worse under the surgeon's treatment, on Saturday sent for one of these, who kindly and benevolently went to see him, and afforded him relief; but the deceased, fearing his club fund would be stopped, returned to the surgeon's treatment on Monday. Now, although this surgeon had him in his care nearly five days previous to his death (and who knows what was the nature of the medicines administered during that time?), he thought he had an opportunity of revenging himself upon your admirable system of Medical Botany, and although such unfair means as above stated were taken, and his "*malus animus*" was carried to its fullest extent, he entirely failed to overwhelm "Medical Botany." The report of the inquest in the *Hereford Times*, which I forward you, will furnish you with a specimen of the literary capabilities and intelligence of the druggist reporter.—We beg to remain, dear sir, yours most respectfully,

INHABITANTS OF ABERSYCHAN.

Abersychan, 13th February, 1859.

MEDICAL BOTANY IN OXFORD.

ON Tuesday and Wednesday, January 25th and 26th, two lectures were delivered by Mr. B. V. Scott, agent for Dr. COFFIN, to crowded and intelligent audiences. On Tuesday the lecturer gave "The History of Medical Botany in England and America." The account of Dr. COFFIN's progress in England was very interesting. On referring to the public testimonials presented to the doctor, the lecturer asked, Who else among the faculty had received such honours? It was a convincing proof of the value of the system, that a stranger coming to these shores, expounding truth in opposition to deeply seated prejudice, and opposed personally by the faculty, had braved it all, and had met with such honour. The lecturer then adverted to Oxford, gave his own experience, and adduced twelve recent cases of signal cures effected by him, after medical men had failed. Some of the patients, who were present, rose and testified to the truth of his statements, which produced a most powerful effect upon the audience. He concluded by expressing his confident hope that the day would arrive when Medical Botany would prevail over the errors of the schools.

On Wednesday night the lecturer gave "The Natural Pathology of Disease, and the Simplicity of its Cure." He described, in the most forcible terms, the monopoly-made difficulty of the faculty in their theory of 1,500 forms of disease; and shewed that the cause of disease is in every case the same, viz., diminution of heat, or a disturbed operation of it. This oft-told truth he illustrated in a striking manner, carrying conviction to the minds of many to whom it was apparently new; he adverted to the complicated machinery em-

ployed by the faculty in their attempts to cure. If he went to an oculist with a diseased eye, and the oculist should give him a knock on the other eye, in order to cure the diseased one, he should consider it at least clumsy; yet such, in effect, was the allopathic treatment. He then shewed, in contrast, the simplicity and effectiveness of the botanical system, particularly in cases of fever, to which several persons, who could speak experimentally, applaudingly assented. One person was present, who had attended Mr. Scott's former lectures to oppose him, to testify to the cure of his child by Mr. S., after the failure of a M.D., who was astonished by the cure. Medical Botany has many warm adherents, and will, undoubtedly, ere long be firmly established in this City.

Wm. H. Cox.

FRACTURES

Are a division of bone into two or more fragments, generally occasioned by external violence. These are divided into 1. Simple, where the bone has been divided, and the integuments remain unimpaired; 2. Compound, where there is a corresponding wound in the soft parts, by which the fractured extremity of the bone becomes exposed.

Causes.—Certain diseases of the bone, as abscess, friability, or mollities, or external violence.

Treatment.—Reduction of the displaced parts to their original situation; their retention in that state; and obviating any attendant or consequent morbid symptoms.

BONES OF THE NOSE.

Fractures of the bones of the nose, though productive of little inconvenience at the time, are not unfrequently followed by unpleasant consequences; as ozæna, polypus, &c.

Treatment.—The fractured portion may be easily replaced by means of a common spatula, or other instrument, introduced by the nostril, and in general it will retain its situation without any further assistance; if not, the fractured portion may be supported by the introduction of lint.

LOWER JAW.

Diagnosis.—The nature of the injury is obvious to the sight.

Treatment.—The parts being accurately replaced and kept firm by an assistant, a thick compress of lint should be placed over the seat of the fracture, and a bandage applied, by means of which the jaw may be firmly held upwards and backwards: for this purpose the most effectual is a bag or purse, to receive the chin, with four strong tapes, or ends, attached to it; the two inferior of which are to be tied over the parietal bone, the two superior over the occiput.

During the cure the patient should be kept quiet, and fed upon spoon-meat.

CLAVICLE.

Diagnosis.—The shoulder is usually drawn forward, and that portion of bone which is attached to the sternum, projects over the other fractured extremity, and may be distinctly felt by tracing the usual course of the clavicle with the finger.

Treatment.—The arms and shoulders of the patient are to be firmly drawn backwards by an assistant; when the fractured extremities of the bones immediately come in opposition. The parts are now to be covered with an adhesive plaster, and a bandage is to be applied to retain them in their reduced situation; that called the stellate is usually employed; it is a single-headed roller of moderate breadth, and is applied by making it to pass under the axilla of one side, and over the shoulder of the opposite, describing on the back the figure 8. It should be drawn with considerable tightness, and the arm should afterwards be supported with a sling.

STERNUM.

Diagnosis.—A fracture of the sternum is rendered evident by the inequalities perceptible when the surface of the bone is examined with the fingers; by a depression or elevation of the broken pieces; a crepitus, and an unusual mobility of the injured part in respiration; the breathing is rendered difficult, and almost always accompanied with cough, spitting of blood, palpitation, and inability to lie on the back.

Treatment.—When mere solutions of continuity, a piece of soap plaster to the situation of the injury, a roller round the chest, rest, and the avoidance of stimulating food. Where the bone is

much depressed, it may become necessary to apply the trephine, and elevate it.

OS COCCYGIS.

Diagnosis.—This accident is recognised by the moveableness of the fragments, and the acute pain produced when the thighs are moved; the fractured portions being then disturbed by the action of the glutæi muscles, some of whose fibres are attached to them.

Treatment.—Quietude should be enjoined; discutient or emollient applications employed, according to the particular state of the soft parts; stimulating food must be avoided; and the patient be enjoined to avoid lying on his back, or sitting down. He must also avoid walking, which by throwing the glutæi muscles into action would disturb the fractured portion. No manual agency of any kind should be exerted.

In fractures of the other bones of the pelvis, the same principles must be adhered to.

RIBS.

Diagnosis.—The characteristic marks of a fracture of the ribs are the crepitus or grating of the bones, which may be distinctly felt and heard upon the patient's coughing, or during a deep inspiration; the pain in inspiration being referred to a particular spot.

Treatment.—An adhesive plaster, or the ceratum saponis of the London Pharmacopœia, should be applied over the part, and the body should then be tightly encircled with a broad bandage.

Should the extremity of the fractured rib puncture the lungs, an effusion of air into the cellular membrane will take place; and sometimes will extend to the scalp, the eyes, and downwards, along the abdomen, to the lower extremities. In such cases small scarifications with the point of a lancet are required; and if there be symptoms of fever, or inflammation, treat those symptoms in accordance with DR. COFFIN'S "Guide to Health."

Friendships should be formed with persons of all ages and conditions, and with both sexes. It is a great happiness to form a sincere friendship wtih a woman; compatible with the most perfect innocence, and a source of the greatest delight tot hose who are fortunate enough to form it—SYDNEY SMITH.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

PHYSIOLOGY OF MAN.

(*Concluded from page* 129.)

THE teeth and jaws of man are in all respects much more similar to those of monkeys, than of any other animals. A skull, apparently of the orang-utang, in the Museum of the College, has the first set of teeth: the number is the same as in man, and the form so closely similar, that they might easily be mistaken for human. In most other simiæ the canine teeth are much longer and stronger than in us; and so far these animals have a more carnivorous character. The points and ridges of the molares in simiæ are distinguished by their sharpness from the peculiar obtuse tubercles of the human molares.

The length and divisions of the alimentary canal are very different, according to the kind of food. In the proper carnivorous animals the canal is very short, the large intestine cylindrical, and the cæcum not larger than the rest. The form of the stomach and the disposition of its openings are calculated to allow a quick passage of the food. In the herbivora, the whole canal is long; and there is either a complicated stomach, or a very large cæcum and a sacculated colon; the stomach, even where simple, is so formed as to retain the food for a considerable time.

In comparing the length of the intcstines with that of the body in man and in other animals, a difficulty arises on account of the legs, which are included in the measurement of the body in the former, and not in the latter. The great depth of the cranium in man makes a further addition to the length of body, and thereby diminishes the proportion which the intestine bears to it. As our legs are half the height of the body, that should be reduced one-half, when it is compared with that of animals measured from the head to the anus; or the length of the intestines may be doubled. When allowance is made for this circumstance, man will be placed nearly on the same line with the monkey race, and will be removed to a considerable distance from the proper carnivora. Soemmering states that the intestinal canal of man varies from three to eight times the length of the body. In Tyson's chimpansé of twenty-six inches, the canal measured 159 inches, or about six times the length of the body. In two sapajous and two monkeys, the intestines were respectively 62 and 96 inches: as the body is said in all to have been about 14 inches from the head to the anus, its proportion to the intestines will be in the former as $1:4\frac{6}{14}$, in the latter as $1:6\frac{1}{1}\frac{2}{4}$. From these, as well as other instances, it is apparent that the comparative length of the alimentary canal in simiæ is less than in man.

The form of the stomach and cæcum, and the structure of the whole canal, are very much alike in man and the monkey kind. The orangs (S. satyrus, troglodytes, and gibbon) have the appendix vermiformis, which the others want.

Thus we find that, whether we consider the teeth and jaws, or the immediate instruments of digestion, the human structure closely resembles that of the simiæ; all of which, in their natural state, are completely herbivorous.

Man possesses a tolerably large cæcum, and a cellular colon, which, I believe, are not found in any carnivorous animal.

I do not infer from these circumstances that man is designed by nature to feed on vegetables, or that it would be more advantageous to him to adopt that diet. The hands and the arts of man procure for him the food which carnivorous animals earn by their teeth. The processes of cookery bring what he eats into a different state from that in which it is employed either by carnivorous or herbivorous animals. Hence the analogy in the modes of procuring and preparing food is too loose for us to place much confidence in the results of these comparative views. We must trust to experience alone for elucidating the great problem of diet: its decision has been long ago pronounced, and will hardly now be reversed.

It is again a different inquiry, Which diet is on the whole most conducive to health and strength? Which is best calculated to avert or remove disease? Whether errors in quantity or quality are most pernicious? The solution of these and other analogous questions can only be expected from experimental investigation. Mankind are so averse to relinquish their favourite indulgences, and to desert established habits, that we cannot entertain very sanguine expectations of any important discovery in this department: we must add to this, that there are many other causes affecting human health, besides diet. Before venturing to draw any inferences on a subject beset with so many obstacles, it would be neccssary to observe the effects of a purely animal and a purely vegetable diet on several individuals of different habits, pursuits, and modes of life; to note their state, both bodily and mental; and to learn the condition of two or three generations fed in the same manner.

Recurring to the subject which has been already adverted to—the extension of the great human family over the whole habitable globe, let us inquire a little into

the causes of a phenomenon which so remarkably distinguishes man from all animals—this power of existing and multiplying in every latitude, and in every variety of situation and climate. Does it arise from physical endowments, from any particular capabilities of the human organisation, from strength and flexibility of the animal machinery? or from the effects of human art and contrivance, in affording protection from extremes of heat and cold, from winds and rains, from vapours and exhalations, and the other destructive influences of local situation? Is it, in short, the result of physical constitution, or of reason? I think that both these causes are concerned; that the original source of an attribute which so strikingly characterises our species, is to be sought in the properties of the human frame; and that this original power of the bodily fabric is assisted and fully developed by the mental prerogatives of man.

In what way do the Greenlander, the Esquimau, and the Canadian, employ remarkable talents or invention to protect themselves against the cold? They brave the winter with open breast and uncovered limbs; and devour their whales and seals, dressed, raw, or putrid. The Negro is healthy and strong under a vertical sun, with the soles of his feet bare on the burning sands. On the other hand, the fox, the beaver, the marmot, and the hamster, seek the shelter of dwellings which they dig for themselves. In this comparison, in respect to protection from external influences, man enjoys no peculiar privilege. The mind, indeed, employs the excellent structure of the body, lifts man above the rest of the creation, accommodates him to all places, gives him iron, fire and arms, furs, and screens from the sun, &c.; but, with all this, could never make him what he now is, the inhabitant of all climates, if he did not possess the most enduring and flexible corporeal frame. The lower animals, in general, have no defence against the evils of a new climate, but the force of nature. The arts of human ingenuity furnish a defence against the dangers that surround our species in every region. Accordingly, we see the same nation pass into all the climates of the earth; reside whole winters near the pole; plant colonies beneath the equator; pursue their commerce, and establish their factories, in Africa, Asia, and America. They can equally live under a burning sky and on an ice-bound soil, and inhabit regions where the hardiest animals cannot exist. Such changes indeed ought not to be hazarded suddenly and without precaution. The greatest evils that have arisen from change of climate have been occasioned by the presumption of health, that refuses to use the necessary precautions, or by neglect, or ignorance, that knows not what precautions to use. But when changes are gradually and prudently effected, habit soon accommodates the constitution to a new situation, and human ingenuity discovers the means of guarding against the dangers of every season and of every climate.

The superiority of man appears more striking, when we contrast his universal extension with the narrow limits to which other animals, even the most anthropomorphous, are confined. The whole tribe of simiæ are nearly included within the tropics; and no species has any considerable range even within these boundaries. No species is common to the Old and the New World; none, probably, to Asia and Africa. The orang-utang seems to be found only in the island of Borneo; and the chimpansé in a district of Africa. The gibbon is peculiar to the East Indies; and the proboscis monkey (simia rostrata) to the Sunda Isles.

The two most man-like monkeys (S. satyrus and troglodytes), inhabiting small districts of warm regions, are very inconsiderable species in number; and thus offer a strong contrast to the thousand millions of the human species. They are subject to numerous diseases; lose all their vivacity, strength, and natural character; and perish, after lingering in a miserable way, when removed from their native abodes. An orang-utang brought to Paris, never recovered the exposure to cold in crossing the Pyrenees, and died at the age of fifteen months, with most of the viscera diseased and tuberculated. The monkeys in general exist with difficulty in temperate countries, and can propagate only in warm climates. One which was impregnated in England, and attended

with all possible care, brought forth a young one, which died immediately. Probably the species could not be continued here, with all the aid of art; and it certainly could not be effected if the animals were wild. When they are introduced into the north (indeed into the greater part) of Europe, and carefully managed in their food, temperature, &c., they die very quickly; and, in almost all cases, of disease in the viscera, particularly the lungs.

Other animals, as the Polar bear, naturally constructed for cold, cannot subsist in warmer regions. The dog accompanies man everywhere; but, with all the protection and assistance afforded by his master, degenerates, and undergoes remarkable changes, both of bodily structure and other properties, in very warm and very cold regions.

Other circumstances in the human economy correspond with this power of adaptation; such are the slow growth, long infancy, and late puberty of man. In no animal but man do the sutures of the cranium close or the teeth come out at so late a period: none is so long before it can support the body on the legs, before it arrives at the complete adult stature and capacity for exercising the sexual functions. The long infancy of our species is compensated by proportionate longevity: no other of the mammalia, of corresponding size, enjoys so long a life as man. As the duration of life is in proportion to the time spent in arriving at the full growth, there is every reason to suppose that the monkeys fall very short of man in this respect: in this climate they are cut off so quickly, that we cannot form a judgment.

If we add to the foregoing circumstances, that man is not provided by nature with means of defence, and, consequently, requires assistance; and that his great distinctions, reason and speech, are only germs which are not developed by themselves, but are brought to maturity by extraneous assistance, cultivation, and education, we shall infer that he is designed by nature for social union. Such a condition appears more consonant to the structure, properties, and functions of our frame, even if it were not supported by the concurring voice of actual experience in all ages and nations, than the imaginary and most absurdly named "state of nature" of some philosophers. Rousseau, the great apostle of this doctrine, informs us, in direct words, that the state of nature never has existed: and he sets aside all facts as foreign to the question. With these admissions before us, we are required to believe that we have degenerated from our natural state; that speech, society, arts, inventions, sciences, agriculture, commerce, property, civil government, and inequality of condition, have introduced all possible misery, and have debilitated our physical being; that we should live in the woods, scattered and solitary, to get food enough, protect life by flight and force, satisfy our desires, and sleep. Buffon has reasoned so well on this subject, that I employ his words: "In this condition of nature, the first education requires an equal time as in the civilised state; for in both, the infant is equally feeble and equally slow in its growth, and, consequently, demands the care of its parents during an equal period. In a word, if abandoned before the age of three years, it would infallibly perish. Now, this necessary and long-continued intercourse between mother and child is sufficient to communicate to it all that she possesses; and though we should falsely suppose that a mother, in a state of nature, possesses nothing, not even the faculty of speech, would not this long intercourse with her infant produce a language? Hence, a state of pure nature, in which man is supposed neither to think nor speak, is imaginary, and never had an existence. This necessity of a long intercourse between parents and children produces society in the midst of a desert. The family understand each other by signs and sounds; and this first ray of intelligence, when cherished, cultivated, and communicated, expands, in process of time, into the full splendour of reason and intellect. As this habitual intercourse could not subsist so long, without producing mutual signs and sounds, these, always repeated, and gradually engraven on the memory of the child, would become permanent expressions. The catalogue of words, though short, forms a language, which will soon extend as the family augments, and will always follow, in its im-

provement, the progress of society. As soon as society begins to be formed, the education of the infant is no longer individual; since the parents communicate to it, not only what they derive from nature, but likewise what they have received from their progenitors, and from the society to which they belong. It is no longer a communication between detached individuals, which, as in the animals, would be limited to the transmission of simple faculties, but an institution of which the whole species participates, and whose produce constitutes the basis and bond of society."

IMPORTANT CASES

OF SUCCESSFUL TREATMENT BY ONE OF DR. COFFIN'S AGENTS.

We have great pleasure in calling the attention of our readers to the following particulars of cases treated with singular success by our esteemed agent, Mr. B. V. Scott, of Oxford:

CASE OF GREAT NERVOUS DEBILITY.

To Mr. Scott.—Dear Sir,—I feel it a duty and a great blessing to be able to make known to any persons suffering from weakness of body and nervous debility the benefit I received after suffering. For *eight months* I could neither sleep at night nor rest by day; and in less than *one month* I was able to sleep comfortably, and in *two months* I felt, I may say, *quite well.* I advise all suffering to go to Mr. Scott. With many thanks, I am, Sir, yours, &c.,

E. Druce.

Garsington, January, 1859.

ANOTHER CASE OF NERVOUS DEBILITY.

To Mr. Scott.—Dear Sir,—It is my wish to make known the good effects of Dr. Coffin's system of Medical Botany; and for the encouragement of the afflicted, I should like to attend your lectures, but feeling that I should not be heard, I shall be obliged if you would read this note. It is *sixteen years* since I knew what it was to be well. I have suffered from nervous debility, excessive weakness, attended with great pain, and have been attended by several medical gentlemen. I was under one for *five years*, but received no real benefit, for the good I got one week I lost the next. Three years ago it was thought I was fast sinking. I had a cough, no appetite, and two or three hysteric fits in a day. To all human appearance my time on earth was short: as my friends came to see me they took their leave of me, and I of them, feeling sure that we should not meet again in this world. In this state my husband wished me to try Medical Botany. But after having had the best advice in Oxford, and feeling satisfied that all had been done that could, I refused, and indignantly said, "No quackery for me." I said (as many others do), "What can Mr. Scott know? I will never be under a hatter:" but I wish to testify *that he does know*, and that, if it was only in my case, Dr. Coffin's system of Medical Botany is a great blessing, for by God's blessing it has restored me to health. When I refused, it made my husband very unhappy, and for *his satisfaction* I consented to see Mr. Scott. He did not give me much encouragement: he told me candidly he thought I was too far gone for medicine to do me good, but if I liked to try he would send me some, and when I commenced I used to say, "I might as well take a glass of water for what good the medicines would be to me;" but, to the surprise of myself and friends, *in a fortnight I was better, and in* THREE MONTHS *I was comparatively well;* and with taking a little medicine now and then, I am, thank God! in the enjoyment of health. I do not mean to say that I am strong, neither am I free from pain, but I feel sure that what I am now suffering from is the effects of poisonous drugs. For years I did not know what it was to have a good night's rest, but now I sleep well without any composing draughts. I consider that Dr. Coffin's system of Medical Botany is a great blessing to mankind, for where it does no good—it can do no harm; and those who know what *long doctors' bills* are, as I do by sad experience, will find that it is far the cheapest. I assure all that read this that I look upon myself as a living wonder. For years I could do nothing about the house, now (I was going to say I can do everything) at least I can assist in all that is to be done; *and this is the effect of Medical Botany.*

For particular reasons I do not wish my name publicly mentioned.

I remain, yours respectfully,

C.

St. Clement's, Oxford, January, 1859.

WOUND ON THE LEG.

Dear Sir,—I am sorry not to have written to you before to say how valuable your medicine and vapour-bath have proved to me. I am now better in my health than I have been for five years. My leg was hurt twenty-two years ago, and has at times been very painful ever since; the last five years I can say bad, and I had medical advice, and tried all that was thought possible to do good, but failed until I came to you and was under your care. After taking your medicine and using the vapour-bath *three weeks*, I was *quite another person*, and in my leg also I have no pain or ill-feeling, I am thankful to say, up to the present time. I must trouble you to say what the complaint was from which I was suffering. I had used leeches, fomentations, poultices, and lotion, and all of no use until I came to you.

I remain, yours respectfully,

E. YOUNG.

Denton, Oxon, January, 1859.

RHEUMATIC FEVER.

This was a severe attack of rheumatic fever, generally from one month to six weeks in hand. Mr. M—, as a member of a club, had the club doctor, but reaping no benefit sent for me, and in four or five days he was cured. The medicines sent by the doctor were committed to the fire, and the doctor (not knowing that any one else had attended) *expressed his surprise at the rapidity of the cure.* The patient afterwards said he was better than he had been for some time.

DYSENTERY.

This was a case of dysentery, and was attended by a doctor, who did no good, in whose care the lady had been for some months. In a fortnight my medicines cured her, *and the doctor expressed his astonishment!*

GASTRIC FEVER.

is was a case of gastric fever, attended doctor, who said he did not expect the child would recover. At the request of the parents I sent medicine, and in three or four days the child was cured, the doctor astonished, and the parents' hearts gladdened.

BENJAMIN V. SCOTT.

January, 1859.

EXPERIMENTS IN CHEMISTRY.

(Continued from page 131.)

TAKE two grains of oxmyuriate of potash, with three or four grains of flour of sulphur, and mix the ingredients very well on paper. If a little of this mixture be taken up on the point of a knife and dropped into a wine-glass containing some sulphuric acid, a beautiful column of flame will be perceived the moment the powder comes in contact with the acid.

Put a little oxymuriate of potash and a bit of phosphorus into an ale-glass, pour some cold water upon them cautiously so as not to displace the salt. Now take a small glass tube, and plunge it into some sulphuric acid; then place the thumb upon the upper orifice, and in this state withdraw the tube, which must be instantly immersed in the glass, so that, on removing the thumb, the acid may be immediately conveyed upon the ingredients. This experiment is an example of a very singular phenomenon, combustion under water.

Proceed in all respects as in the last experiment, and add a morsel of phosphuret of lime. Here, besides the former appearance, we shall have combustion also on the surface of the water.

Prepare a mixture of equal parts of lump sugar and oxymuriate of potash; put a small quantity of this mixture upon a plate or a tile; then dip a piece of sewing thread into a phial of sulphuric acid, so as to convey the smallest quantity of the acid; with this touch the powder, and an immediate burst of flame will be the consequence.

Mix, without much friction, ten grains of oxymuriate of potash with one grain of phosphorus, and drop the mixture into concentrated sulphuric acid. This is an instance of detonation and flame being produced by the mixture of a powder with a cold liquid.

Add a few grains of oxymuriate of potash to a tea-spoonful or two of alcohol, drop one or two drops of sulphuric acid

upon the mixture, and the whole will burst into flame, forming a very beautiful appearance.

A mixture of oxymuriate of potash and arsenic furnishes a detonating compound, which takes fire with the utmost rapidity. The salt and metal, first separately powdered, may be mixed by the gentlest possible triture, or rather by stirring them together on paper with the point of a knife. If two long trains be laid on a table, the one of gunpowder and the other of this mixture, and they be in contact with each other at one end, so that they may be fired at once, the arsenical mixture burns with the rapidity of lightning, while the other burns with comparative slowness.

Into an ale-glass of water put a few pieces of zinc, and a small bit of phosphorus; then drop a little sulphuric acid upon the mixture by means of a glass tube, as already described, and phosphuretted hydrogen will presently be disengaged, which will inflame on rising to the surface of the water.

(To be continued.)

SUBSCRIPTIONS
FOR THE BOTANIC HOSPITAL.

Mrs. Walters £0 5 0

NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea); on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

FORD'S
CELEBRATED TRICOPHEROUS.

The best-approved application for cleansing, beautifying, preserving and reviving the hair. It should be used by all persons recovering from fever, or any other illness, as it restores the tone of the cutical secretions, and gives a healthiness to the hair and skin.

Sold at W. B. FORD'S Establishments, 134, High Holborn, and 24, Union Street, East, Spitalfields, in four-ounce bottles, at 1*s.* 3*d.* each.

NOTICE.

The Editor has several miscellaneous sets of the Anatomical and Botanical Drawings, which he offers at an extremely low price, and are to be obtained at 134, High Holborn. They consist of the following:—

1 set of 5, beautifully coloured	15*s.*
An unique and splendid set of the sexual organs, in health and disease	32*s.*
A set of 3, coloured and varnished, for mounting	12*s.*
Two whole-length figures, 5 feet 4 inches high, showing the bloodvessels, heart, kidneys, &c., &c. .. .. each	15*s.*0*d.*
2 highly coloured drawings, showing the circulation of the blood, and the whole intestinal canal	7*s.*
8 of our medicinal herbs	12*s.*

J. STEPHENS,

Eight years accredited Agent for Dr. COFFIN, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

Visits to Patients, 2*s.* 6*d.*, in advance.

G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

34, WORCESTER STREET,

Sole Agent for Dr. COFFIN in Birmingham, from whom all the Herbs, Roots, Barks, and preparations used in the Botanic Practice, can be had genuine.

Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

JOSEPH NADEN,

Sole Agent for Dr. COFFIN, 204½, *Shales-moor, Sheffield,*

Keeps constantly on hand all the Remedies used in Dr. COFFIN'S Practice; also Dr. COFFIN'S "Guide to Health," "Treatise on Midwifery," "Treatise on the Generative Organs," "A Course of Twelve Lectures," and "Botanical Journal."

Mr. NADEN is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

NOTICES TO CORRESPONDENTS.

POST-OFFICE ORDERS and all communications for goods, &c., to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 283.—Vol. IX. SATURDAY, MARCH 19, 1859. Price 1d.

DR. COFFIN'S LECTURES
AT THE LITERARY INSTITUTION, BOROUGH ROAD, BOROUGH.

As these Lectures progress, so the public appreciation of their excellence, truthfulness, and oneness of purpose progresses, evinced by the nightly increase of a highly delighted and satisfied audience, whose attention becomes so fixed upon the subject by the remarkable tact of the doctor, who much enhances the interest of the Lectures by the introduction of short, pithy anecdotes, at the same time commanding a marked attention to the great truths of his Medico-Botanic System of Medicine.

On account of the great increase in the number of the doctor's Thursday patients, he has kindly given an extra hour of his time; therefore Dr. Coffin will commence seeing patients *gratis*, at nine o'clock every Thursday morning, at the house of his Agent, Mr. T. Bean, No. 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street. It is highly requisite, that parties desirous of consulting Dr. Coffin should attend, as early as possible, at the above address, on the Thursday morning, as several patients could not see him last week on account of a great increase of their number.

THE GLEANER, No. 29.
PATHOLOGICAL OBSERVATIONS ON THE BODIES OF DRUNKARDS.

"Disease and death revel in the bowl."

First. The *nervous centres* present the greatest amount of diseased change, and yield a per-centage of 92 in the whole; or, in other words, 92 habitual drunkards out of every 100 are thus diseased. This bears out the evidence of Dr. Carpenter, that "from the peculiar power which alcohol has been shown to possess of disturbing the functional activity of the nervous system, and perverting its nutrition, it might be expected that disorders of this apparatus would be amongst the most frequent of the maladies induced by it; and further, that such disorders should show themselves rather in the brain than in the spinal cord or any other part."

The stimulating action of alcohol on the cerebral system, and its power of exalting and perverting the mental powers, afford a satisfactory explanation of the close coincidence observable between the results of the inspections of the head in the bodies of so many known drunkards, and those deduced from the examination of the same part, in those of confirmed lunatics, as stated in works on insanity. Thus we find, in the cases examined, diseased changes in the cranium, the membranes and substance of the brain, and in the cerebral ventricles, both in number and kind, which, were there any *specialty* in mental diseases, would scarcely be encountered to the same extent in those under consideration.

Secondly. The *changes in the respiratory organs* succeed in frequency those in the nervous centres; such alterations reaching in all to $63\frac{1}{4}$ out of 100. The additional labour thrown upon the lungs, when alcohol has entered the circulation, after its absorption, and the retardation which takes place in these circumstances of their functional activity from this

cause, as well as by the poisonous effects of alcohol on the medulla oblongata, will alone go far to account for the frequency of diseased changes in these organs in drunkards. The mutual reaction between the lungs and the heart, liver and kidneys, where these last are affected, must likewise augment the operation of ordinary diseased causes on the respiratory organs, especially in some cases where the alterations were of a marked kind.

Thirdly. *Morbid changes in the liver* is to be attributed to the direct influence of the alcoholic stimulus, best marked in the class of more advanced drunkards, whose livers become either enlarged, granular, nutmeg or fatty, to a great extent.

Fourthly. The changes in *the central organ of the circulation and the large arteries connected with it.* The changes in the heart and arteries to be met with in drunkards, in such numbers, is attributed by Dr. Carpenter partly to the gouty and rheumatic diatheses generated in such persons by alcoholic fluids, and in part to the direct action of the poison introduced into the blood; whilst he has not overlooked the effects of antecedent structural diseases in other organs. That these last play an important part, if not in originating, at least in aggravating, the diseased states of the heart and arteries in drunkards, cannot be doubted, if the amount and severity of these diseases are taken into account.

Fifthly. *Diseased kidneys* is the next result of this most pernicious vice. That alcohol will escape by the kidneys unchanged, is proved by the fact, that it can be tested chemically in the urine. This has been verified in several cases of death by drowning; in proof of which, take this case in point:—A man, forty-seven years of age, while intoxicated, threw himself into the Aberdeen Harbour, in December, 1850. The body was recovered from the water in less than an hour, and inspected fourteen hours after death. At the inspection, from three to four drachms of urine from the bladder was being heated in an iron spoon, over the flame of a candle, to ascertain if it contained albumen, when the flame set fire to the vapour rising from the fluid. In this case, besides marked hypertrophy of the brain and liver, and dilatation of the ascending aorta, both kidneys were found pale and bulky, with their cortical part attenuated, and the urine highly albuminous.

Sixthly. That *the intestinal tube*, as a whole, should present fewer lesions in drunkards than the brain, lungs, liver, heart, and kidneys, and that these should be chiefly encountered in the stomach, accords with the experience of others, and has been explained by the fact of the rapidity of the absorption of the fluid, and the consequent speedy disappearance of it from the organ which it first reaches on its being taken. The number of cases in which *the stomach* was seen to have suffered more or less was not, however, inconsiderable, reaching a per-centage in all of $37\frac{1}{2}$.

Seventhly. *The highly congested state of the capillaries* indicated by the deep and uniform reddening of the interior of the stomach on its exposure, differs from the congestion occasionally met with in other instances of death, and this appearance rarely extends beyond the stomach itself, is limited to its inner membrane, and is only noticeable after a short exposure of it to the atmosphere.

We could go on to a vast extent with our description of the various diseased actions consequent upon drunkenness, but we think, as a winding up, that the simple details of them will suffice to show the deathly consequences resulting from one of the direst vices of which mankind can be guilty. The stomach is usually contracted, and its mucous coat is softened; the brain is also softened; fatty degeneration of the kidneys, heart and arteries takes place.

These facts thus adduced were collected and arranged without any mental prepossessions on the part of the author, and the attempt either to underrate or to exaggerate the effects of alcoholic intemperance, it has been his endeavour equally to avoid.

If we would value the future happiness of our children in this world, we must show them from infancy that the sanctity of a well-ordered home is the reflection of that peace which the world can neither give, nor take away from us.

ALLOPATHY *v.* MEDICAL BOTANY.

TO DR. COFFIN.

SIR,—I feel much indebted to you for the good your medicine and ointment have done me. My foot was swollen and very painful last August, 1858, when I put a small blister on the upper part of the foot, thinking that would cure it; when our family doctor looked in, and said I must remain in bed. He kept sending medicine and ointment till the end of January, 1859, when I applied to you. I am happy to say that one month of your treatment has healed my foot, and made a perfect cure, so that I can walk nearly the same distance as ever; your charge being seven shillings and sixpence—our family doctor's, thirty pounds.—I am, sir, with many thanks, yours respectfully,

D. CHAMBERS.

16, *Brighton Terrace, Brighton,*
March 11th, 1859.

TEA AND COFFEE.

THEIR VALUE AS A BEVERAGE.

BY DR. JULIUS LEHMANN.

WHAT an important effect have tea and coffee! The tea-and-coffee-drinker may have *less* to eat, and yet lose *less* weight, wear his body out *less*, than a water-drinker. At a comparatively small expense he may save some of the costly parts of his diet, those nitrogenised solids that entail so much thought, labour and anxiety to obtain. The loss of carbon, indeed, goes on much as usual, and a moderate outlay will supply that; but what an economy it is to spare the quantity consumed of meat, bread, milk, and all the most expensive viands! Besides the thein of tea (or caffein of coffee, for they may be viewed for the present purpose, at any rate, as identical), and the essential oils, there is contained in both tea and coffee a certain amount of difficultly soluble vegetable albumen, and in the former, especially, a large quantity of tannin. The presence of these substances introduces several modifications in the modes of using the plants as a beverage, and renders one or the other best fitted for people under different circumstances. The tea-leaf, infused for a short time, parts with its essential oil and a small portion of alkaloid, a good deal of which, with the tannin and vegetable albumen, is thrown away with the grounds: if it stands too long, or is boiled, more indeed is got out of it, but an astringent, disagreeable drink is the result: hence it is most suitable for those who can afford to waste some of their food, for the sake of having the rest more agreeable. The boiling of coffee extracts all its oil and alkaloid too, and, when it is drunk in the Eastern method, with the grounds, allows the whole nutriment to be available. Even when strained it is clearly more economical than tea, and appears, therefore, the most proper beverage for a poor man. It may be doubted, however, whether we might not make our tea go further than is at present the custom, were we to adopt other modes of preparation. The following description of the cookery adopted among the Buratsky Tartars, is from the travels of Bell, of Auchterony, written in the middle of the last century; but it is to be observed, that MM. Huc and Gabet give a similar account of that employed in the wilds of Chinese Tartary in the present day:—"A large iron kettle was placed on the fire, and wiped clean with a horse's tail; then water was put in, and then coarse broken tea and salt; when it was near boiling, she took a large brass ladle, and tossed the tea till the liquor turned very brown. It was now taken off the fire, and, after subsiding a little, was poured clear into another vessel. The mistress now prepared a paste of meal and fresh butter, which was put in the kettle and fried; upon this paste the tea was poured, to which was added some good thick cream. The ladle was again employed for about six minutes, when the tea being removed from the fire, was allowed to get cool."

In this, there appears three points worthy of, at least, modified imitation, under some circumstances. The mixing of the salt with the tea makes the albumen more soluble, and enables it to be digested, and *really*, with use, becomes just as palatable as sugar; then the consumption of the whole decoction allows of no waste. Thirdly, the addition of meal forms a mixture of complementary and accessory food, which must be exceedingly nutritious,

while at the same time it probably diminishes the objectionable taste of the tannin. The whole dinner reminds one of the Australian diet of "tea and damper," and where "damper" is deficient, perhaps may afford a traveller a hint.

Chocolate exhibits, according to its mode of manufacture, a variable amount of the alkaloid, allied to that in tea, and coffee, theobromine. It is, however, under all circumstances, much inferior to them in respect of this constituent. The fat, the butter, the starch, and the albumen which it contains, may be obtained cheaper and more digestible in another shape. It is a luxury for the rich, or an expedient for the invalid, not an economical nutriment. This is sensibly enough felt by our nation, as shewn by the Custom-house returns. In the year ending January 1st, 1854, while upwards of fifty-eight and a half million of pounds of tea, and upwards of thirty-seven millions of pounds of coffee, paid duty for home consumption, of cocoa not half a million of pounds were imported for the same purpose. This, too, is in spite of the much larger quantity of the cocoa-bean which is required to make enough for a meal than the other two. As respects the three articles in a medical point of view, what has gone before indicates their mode of employment. When we desire to have the fullest physiological effects, with the least bulk, as a temporary medicine, we shall be best suited by strong infusion of tea, for in that the essential oil, which is shown before to be more energetic than the alkaloid, is predominant. If we would wish to choose as a daily drink that which is the most powerful of ordinary beverages, we may take coffee of the consistency it usually is. If we aim at a less vigorous action, it is afforded in tea made weak, according to the customary method. If this is too violent for the patient, and at the same time he rebels against plain water, we may compound the matter by getting him to take thin chocolate. We may also learn from the observed physiological actions to simplify very much the indications and contraindications of the use of this class of beverages by the sick. Where, for instance, we would limit the loss of substance, as in consumptions, colliquative diseases, the emaciation of fevers, &c., the accessory drinks are most valuable; they will, in acute cases, save a life which hangs on a thread; in chronic cases prolong the days to an almost indefinite period. In persons who have no disorder admitting of nomenclature, but who are what are called "poor creatures" (that is to say, unequal to ordinary exertion of mind or body without an exhausting loss of substance), an useless existence is often by these means made into real life. The pathology of these cases probably is some incapability of taking up by absorption, or of making into blood, or of fixing in the solid tissues sufficient nutriment to supply the waste. They are therefore always on insufficient diet, however much they put down their throats. The obvious indication, then, is to limit the waste by some such means as the accessory foods. When, too, the nervous energy is sluggish, the circulation weak and slow, each may, by their cautious employment, be rendered normal. It is not necessary to quote instances of these facts: they are familiar to us all, as exemplified in the medical use of alcohol; but *the same will also be found true in tea* and its colleagues in a minor degree, if we observe their actions. Of all, the great physical effect is to limit destructive absorption, increase nervous energy, and give mental pleasure. With equal clearness the contra-indications are pointed out; for, when it is desirable that secretion should go on quicker, that destructive absorption should be encouraged for a shorter or a longer period, then we must forbid accessory foods to a greater or less extent. In the hypertrophic temperament (that is, a tendency to a diseased increase of any organ without change in the nature of its substance arising from excessive nutrition), they are noxious; the author has long been in the habit of forbidding tea, as well as alcohol, to fat persons, with striking advantage; and he thinks that good effect has followed its disuse in cases of thickened heart, in muscular subjects, though of course the last result is difficult to trace. In gouty constitutions the whole class disagrees to a greater or less extent. Fermented liquids are

pretty generally, in the present day, cautiously used by such patients, without our advice; but they are not aware of the objections which may be urged against tea and coffee, and the chance of cure by giving them up. A temperate barrister, our friend, of a gouty family, used to endure a martyrdom from acid eructations and vomiting, with gastrodynia (spasmodic pain in the stomach), till he adhered to cold water instead of tea, coffee, or chocolate at breakfast, when his symptoms ceased. In certain skin diseases, which appear to persist from defect of destructive absorption, water-drinking is often a most salutary temporary measure; when the nervous system is too sensitive, when the circulation too excited, tea and alcohol are equally injurious, and should be abstained from. In fact, so many cases are benefited that the HOMŒOPATHS and HYDROPATHISTS, whose whole secret lies in a combination of abstinence from accessory foods with mental amusement, are able to *vaunt* their systems as an universal panacea. By the simple process of *lying*, wilfully or ignorantly, they succeed in easily overcoming a difficulty which gives us much trouble; they gladden the patient's heart, by inducing him to have faith in a panacea, and enjoy himself in the country, at the same time as they augment the destructive assimilation in the body. If we keep this in mind, we may usually succeed in attaining the same object in an honest way; but it requires much thought and contrivance on our part, and good sense on the part of the patient. The difficulty is obvious enough: a vast number of cases of disease exhibit deficient nervous energy at the same time as they require an augmentation of destructive secretion; and on the other hand, augmented excitability of nerve while the destruction demands arrest.

(To be continued.)

MANSLAUGHTER BY A SURGEON AT EAST HETTON, DURHAM.

WE some time back gave an account of a coroner's inquest at the above place, at which was stated in evidence the atrocious conduct of one McHugh, a surgeon, in the case of a Mrs. Martha Davis. This most respectable diplomatised individual was brought to trial for the above offence on March the 4th of the present year. His flagrant conduct was fully proved; he was found guilty, and sentenced to twelve months' imprisonment.

Had this scoundrel met with his deserts he would have been transported for seven or fourteen years, for a grosser case of malpractice and drunken inefficiency has never been our lot to recount.

We, the agents and practitioners of Dr. COFFIN'S Medico-Botanic System, triumphantly ask, Has such an event ever happened to one of us? Has a fair case, even of negligence, been proved against any one of us (much less manslaughter)? We answer, No, decidedly not, and challenge the world to prove it. It is true that several of us have been the victims of the malignity of the diplomatised practitioners—because, forsooth, the patients have not attended to our directions—and have been the subject of a coroner's verdict; but, when tried in a court of justice, we were *invariably* acquitted.

Can the faculty boast so much? Truth compels the negative. We cure when the members of the faculty fail and give the case up as hopeless.

This conviction must inevitably open the eyes of the public at large, and make them more and more convinced of the inefficiency of the allopathic poisoning treatment.

ON THE PSEUDO-SCIENCES.

From the British and Foreign Medical and Chirurgical Review.

FOR the information of our untechnical readers, we give the meaning of the term "pseudo;" viz., false, spurious, counterfeit.

Morality is as psychically essential in society as food and raiment are physically: science, in the ordinary sense of the word, is not essential; and the so-called "departments" of science appeal with interest only to certain definite classes; which classes, even in combination, form quite the minority of mankind. We shall presently see this is a necessary condition of society, and that science grows slowly, and almost invisibly; that it is as a shut book to the majority, and that a thorough appreciation of any one elementary subject may demand a very considerable acquaintance with *several departments* of

science. For example: who could understand astronomy without the knowledge of mathematics? or physiology without the assistance of chemistry, botany, and anatomy? And each one of these subjects has, in like manner, its dependencies; so that, really, there is nothing like isolation in any department of science. Its various subjects are distinct for a time, like the springs and streamlets of a mighty river; but, like them, converging to its course, and intermingling their particles in its onward flow to the ocean, which ocean again gives forth its clouds, and mists, and rains, again in their turn to become springs, streamlets, rivers and oceans. And yet we find men with a temerity equalled only by their ignorance asserting without evidence—believing without facts—experimenting without observation—manufacturing sciences forsooth out of clever-sounding words and showy tricks; and palming them off—upon whom? My most credulous public, the million; and the million likes it, and pays for it, and flatters itself that it is scientific, and congratulates itself on the "progress of knowledge," and buys a guinea's worth of ready-made science; or goes and hears a lecture on mesmerism, phrenology, globulism; or purchases a book on hydropathy, table-moving, or ghost-seeing, or spiritual rappings. And others like it, *media* like it: we mean the discoverers of these would-be sciences. Of course they like it: they have every reason to like it. It is Australia and nuggets, without the journey or digging for them, without the reputation of being founders of new sciences; for so the million designate these delusions. In true morality they have the best guide; but in science, nothing beyond common sense, which, though they may possess it, they cannot always use it, for they have not learned the trick of answer. Nothing, however, is so essential to them as a knowledge of the sources of fallacy in scientific observation. Now, in reviewing these works and systems of popular delusion, we shall first examine the natural progress of scientific truth, and secondly give certain popular tests of scientific accuracy, which may prove "a law and testimony" to those who have neither time nor inclination nor "knack" to think out tests for themselves. A knowledge of the sources of error is the truth-seeker's best safeguard; for error is everywhere, oftentimes concealing the truth utterly, and oftentimes so simulating its qualities, that it is mistaken for it. Before we decide upon the question of the right or wrong of anything, we must first settle what is the *kind* of inquiry we are about to institute. Is it to determine the error of truthfulness, or the truthfulness of error? And even this decision may be a source of fallacy; for our judgment may be warped or our reasoning illogical. We verily believe that there are few errors so erroneous, or few fallacies so fallacious, but that they contain in their history some gleam, if not a remnant, of truth; and as error is the negation of truth, or its absence, though a quality positive in its action, so there is no truth so pure, so brilliant, or so absolute, but that it may be sullied dimmed, or shaken by error (not ultimately so, for truth is eternal), but for a time; for error, though of short duration, is like bad weeds, of rapid growth.

We are about to speak of pseudo-science. Now what is science? The derivation of the term partially answers the question—"*Scientia*, KNOWLEDGE;" but its conventional usages implies something more—"knowledge systematised;" "knowledge arranged in departments," &c. The imperfection of our acquaintance with the secrets of nature, and of our capacity for the absolute acquisition of ALL knowledge, forces upon us the necessity of division and subdivision of science, which is *one*, a perfect entity, into parts and parcels.

To investigate the details of these particular divisions, to group them under general principles, to view their correlation with other general principles in other divisions of this systematised knowledge, so as to trace the phenomena of the whole range of the so-called sciences, physical and metaphysical, to their *ultimate facts*, is the highest ambition and the most steady aim of the natural philosopher. Imbued with a perfect love of truth-seeking, he commences this inquiry, acknowledging two great principles:—

First, that there are ultimate facts in

CLIVERS.

nature, points beyond which he cannot go, bounds to his finite reason.

Secondly, that science is perfect in proportion to the *paucity* (fewness) of its ultimate facts.

Facts which are ultimate now may have a resolution in some more distant law as yet unknown. The full appreciation of this feeling, therefore, is a difficult attainment, and humiliating to a degree; elaborate processes of logical induction, yielding magnificent results in any particular inquiry, have to be forgotten; and the results themselves, which seemed the very goal of a most worthy ambition, serve only as the starting-point for a new view, like the apparent limit of a perspective vanishing line. Philosophers are not, like poets, born philosophers: they have to make themselves so: they are instructed by that great schoolmaster, Observation, and they educate themselves by reflection and judgment. The reason we can learn better than our ancestors (that is, more in the same time) is not that there is proportionally less to learn, but that everything is more systematised, and hence appears less because it is not scattered. Our "helps to read," and think, and experiment are better.

(To be continued.)

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

CLIVERS (Galium Aparine.)

Also known as Hayriff or Goosegrass.

This herb is so well known as scarcely to need a description; suffice it to say, that it is an annual, and very common along hedgerows and woody places.

Its qualities are powerfully diuretic, and may be used in all cases of obstruction of the kidneys and bladder; a tea made from this herb is good for the dropsy. It also acts mildly upon the bowels, and is equally useful in cases of scrofula, cancer, or long-standing ulcers. Many dangerous cancers have been cured by taking two ounces of the expressed juice three times a day, and applying a poultice of the green herb. It is successfully used in cases of dropsy in children, induced by scarlet fever, for which the expressed juice, or a decoction made in the form of tea, may be taken freely.

PHYSIOLOGY OF MAN.

(Continued from page 142.)

All philosophers refer with one accord to the enjoyment of reason, as the chief and most important prerogative of the human species. If we inquire, however, more particularly into the meaning of this word, we shall be surprised to find what various senses different individuals affix to the same expression. According to some, reason is a peculiar faculty of the mind, belonging exclusively to man: others consider it as a more enlarged and complete development of a power which exists, in a less degree, in other animals: some describe it as a combination of all the higher faculties of the mind: while others assert that it is only a peculiar direction of them.

The subject may, perhaps, be more shortly and safely despatched by considering it *à posteriori*. In order to acquire a clear and satisfactory notion of the mental nature of man and animals, it would be necessary for us to have as complete a knowledge of their internal movements, as we have of our own. But, as it is impossible to know what passes within them, or how to rank and estimate their sensations, in relation to those of man, we can only judge by comparing the effects which result from the natural operations of both.

Let us, therefore, consider these effects; and, while we acknowledge all the particular resemblances, we shall only examine some of the most general distinctions. The most stupid man is able to manage the most alert and sagacious animal. He governs it, and makes it subservient to his purpose. This he effects, not so much by bodily strength or address, as by the superiority of his intellectual nature. He compels the animal to obey him, by his power of projecting and acting in a systematic manner. The strongest and most sagacious animals have not the capacity of commanding the inferior tribes, or of reducing them to a state of servitude. The stronger, indeed, devour the weaker; but this action implies an urgent necessity only, and a voracious appetite—qualities very different from that which produces a train of actions all directed to one common design. If animals be

endowed with this faculty, why do not some of them assume the reins of government over others, and force them to furnish their food, to watch for them, and to relieve the sick or wounded? But among animals there is no mark of subordination, nor the least trace of any of them being able to recognise or feel a superiority in his nature above that of other species. We should therefore conclude, that all animals are in this, respect, of the same nature, and that the nature of man is not only far superior, but likewise of a very different kind from that of the brute.

Thrown on the surface of the globe, weak, naked, and defenceless, man appeared created for inevitable destruction. Evils assailed him on every side; the remedies remained hidden. But he had received from his Creator the gift of inventive genius, which enabled him to discover them. His exertions were roused by the various wants of food, clothing, and dwelling—by the infinite variety of climate, soil, and other circumstances.

This prerogative of invention seemed so important in the earlier periods of society, that it has been honoured with divine worship, as the Thoth of the Egyptians, the Hermes of the Greeks.

"The first savages collected in the forests a few nourishing fruits, a few salutary roots, and thus supplied their most immediate wants. The first shepherds observed that the stars move in a regular course, and made use of them to guide their journeys across the plains of the desert. Such was the origin of the mathematical and physical sciences.

"Once convinced that it could combat nature by the means which she herself afforded, genius reposed no more; it watched her without relaxation; it incessantly made new conquests over her, all of them distinguished by some improvement in the situation of our race.

"From that time a succession of conducting minds, faithful depositaries of the attainments already made, constantly occupied in connecting them, in vivifying them by means of each other, have conducted us, in less than forty ages, from the first essays of rude observers, to the profound calculations of Newton and La Place, to the learned classifications of Linneus and Jussieu. This precious inheritance, perpetually increasing, brought from Chaldea into Egypt, from Egypt into Greece, concealed during ages of disaster and of darkness, recovered in more fortunate times, unequally spread among the nations of Europe, has everywhere been followed by wealth and power; the nations which have reaped it, are become the mistresses of the world; such as have neglected it, are fallen into weakness and obscurity."

Man has made tools for assisting his labour; and hence Franklin sagaciously defined him a "tool-making animal;" he has formed arms and weapons; he has devised various means of procuring fire. Lastly, "The most noble and profitable invention of all others was that of speech; whereby men declare their thoughts one to another for mutual utility and conversation, without which, there had been amongst men neither commonwealth nor society, no more than amongst lions, bears and wolves." This is a most important characteristic of man, since it is not born with him, like the voices of animals, but has been framed and brought into use by himself, as the arbitrary variety of different languages incontestably proves.

Man exhibits, by external signs, what passes within him; he communicates his sentiments by words; and this sign is universal. The savage and the civilised man have the same powers of utterance; both speak naturally, and are equally understood. It is not owing, as some have imagined, to any defect in their organs that animals are denied the faculty of speech. The tongue of a monkey is as perfect as that of a man. Camper asserts that the laryngeal pouch renders it impossible for the orang-utang to speak. I do not clearly understand how this is ascertained; but allowing its truth, there are other monkeys which have not this pouch, and yet cannot speak.

Several animals may be taught to pronounce words, and even to repeat sentences; which proves clearly that the want of speech is not owing to any defect in their organs: but to make them conceive the ideas which these words express, is beyond the power of art: they articulate and repeat like an echo or machine.

Language implies a train of thinking; and for this reason: brute animals are incapable of speech; for, though their external senses are not inferior to our own, and though we should allow some of them to possess a faint dawning of comparison, reflection and judgment, it is certain that they are unable to form that association of ideas in which alone the essence of thought consists.

The possession of speech, therefore, corresponds to the more numerous, diversified and exalted intellectual and moral endowments of man, and is a necessary aid to their exercise and full development. The ruder faculties and simple feelings of animals do not require such assistance. The natural language of inarticulate sounds, gestures and actions, suffices for their purposes. The wonderful discovery of alphabetical writing, and the invention of printing, complete the benefits derived from the noble prerogative of speech.

With the operations of animals—who always perform the same work in the very same manner; the execution of any individual being neither better nor worse than that of any other; in whom the individual, at the end of some months, is what he will remain through life, and the species, after a thousand years, just what it was in the first year—contrast the results of human industry and invention, and the fruits of that perfectibility which characterises both the species and the individual. By the intelligence of man the animals have been subdued, tamed, and reduced to slavery: by his labours marshes have been drained, rivers confined, their cataracts effaced, forests cleared, and the earth cultivated. By his reflection, time has been computed, space measured, the celestial motions recognised and represented, the heavens and the earth compared. He has not merely executed, but has executed with the utmost accuracy, the apparently impracticable tasks assigned by the poet—

> Go, wondrous creature! mount where science guides;
> Weigh air, measure earth, and calculate the tides.

By human art, which is an emanation of science, mountains have been overcome, and the seas have been traversed; the pilot pursuing his course on the ocean with as much certainty as if it had been traced for him by engineers, and finding at each moment the exact point of the globe on which he is, by means of astronomical tables. Thus nations have been united; and a new world has been discovered, opening such a field for the unfettered and uncorrupted energies of our race, that the senses are confused, the mind dazzled, and judgment and calculation almost suspended by the grandeur and brightness of the glorious and interminable prospects. The whole face of the earth at present exhibits the works of human power, which, though subordinate to that of nature, often exceeds, at least so wonderfully seconds, her operations, that by the aid of man her whole extent is unfolded, and she has gradually arrived at that point of perfection and magnificence in which we now behold her.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 144.)

Take a small piece of phosphuret of lime a little moistened by the air, and let a single drop of concentrated muriatic acid fall upon it. In this case phosphuretted hydrogen will also be evolved, accompanied by small balls of fire darting from the mixture, and the most intolerably fetid smell that can be conceived.

If twenty grains of phosphorus cut very small, and mixed with forty grains of finely granulated zinc, be put into four drachms of water, and two drachms of concentrated sulphuric acid be added thereto, bubbles of inflamed phosphuretted hydrogen gas will quickly cover the whole surface of the fluid in succession, forming a real aqueous fountain of fire.

If any light substance, capable of conducting heat, be placed upon the surface of boiling water, and a bit of phosphorus be laid upon it, the heat of the water will be sufficient to set the phosphorus on fire.

If one grain of dry nitrate of bismuth be previously mixed with a grain of phosphorus, and then rubbed together in a metallic mortar, a loud detonation will be produced.

Drop a piece of phosphorus about the

size of a pea into a tumbler of hot water, and from a bladder, furnished with a stop-cock, force a stream of oxygen gas directly upon it. This will afford the most brilliant combustion under water that can be imagined.

Put a little alcohol in a tea-cup, set it on fire, and invert a large bell-glass over it. In a short time an aqueous vapour will be seen to condense upon the inside of the bell, which, by means of a dry sponge, may be collected, and its quantity ascertained. This may be adduced as an example of the formation of water by combustion.

Take a small piece of pure potash, gently breathe on its surface, and place it on an insulated plate connected with the negative side of a powerful galvanic battery in a state of intense activity. Then bring a metallic wire from the positive side of the battery in contact with the upper surface of the alkali, and soon a very vivid action will be observed. Small globules, having a high metallic lustre, and of the appearance of quick-silver, will be seen, some of which will burn with explosion and a bright flame as soon as they are formed. Thus potash may be decomposed, and its metallic base rendered visible in a separate state.

Take the metallic substance formed in the last experiment, called potassium, make it very hot, and confine it in a small glass vessel of oxygen gas. Here a rapid combustion, with a brilliant white flame, will be produced, and the metallic globules will be converted into a white and solid mass, which will be found to be regenerated pure potash.

Place a small piece of potassium within a dry wine-glass, and in order to acquire an idea of its specific gravity pour a little alcohol, ether, or naphtha upon it, when, quitting the bottom of the glass, it will immediately rise to the surface of the liquid, it being, notwithstanding its metallic appearance, the lightest fluid body known.

If a little potassium be dropped into a jar of oxymuriatic gas, it burns spontaneously, and emits a bright red light. In this experiment a white salt is formed, being a true muriate of potash.

If a globule of potassium be thrown upon water, it decomposes it with great violence: an instantaneous explosion is produced with brilliant flame, and a solution of pure potash is the result.

If a similar globule be placed upon ice, it will spontaneously burn with a bright flame, and perforate a deep hole in the ice, which will contain a solution of potash.

Take a piece of moistened turmeric paper, and drop a globule of potassium upon it. At the moment that it comes into contact with the water, it burns and moves rapidly upon the paper as if in search of moisture, leaving behind it a deep reddish brown trace.

When a globule of sodium is thrown into hot water, the decomposition of the water is so violent that small particles of the metal are thrown out of the water, and actually burn with scintillations and flame in passing through the atmosphere.

Sympathetic Inks.

Write upon paper with a diluted solution of muriate of copper; when dry it will not be visible, but on being warmed before the fire the writing will become of a beautiful yellow.

Write with a solution of muriate of cobalt, and the writing, while dry, will not be perceptible; but if held towards the fire, it will then gradually become visible; and if the muriate of cobalt be made in the usual way, the letters will appear of an elegant green colour.

Write with acetate of cobalt, or with a muriate of cobalt, previously purified from the iron which it generally contains. When the writing has become dry, these letters will also be invisible. Warm the paper a little, and the writing will be restored to a beautiful blue.

Draw a landscape with Indian ink, and paint the foliage of the vegetables with muriate of cobalt, and some of the flowers with acetate of cobalt, and others with muriate of copper. While this picture is cold, it will appear to be merely an outline of a landscape, or winter scene; but when gently warmed, the trees and flowers will be displayed in their natural colours, which they will preserve only while they continue warm. This may be often repeated.

Write with dilute nitrate of silver, which when dry will be entirely invisible;

hold the paper over a vessel containing sulphate of ammonia, and the writing will appear very distinct. The letters will shine with the metallic brilliancy of silver.

Write with a solution of nitrate or acetate of lead. When the writing is dry it will be invisible. Then having prepared a glass decanter with a little sulphuret of iron strewed over the bottom of it, pour a little very dilute sulphuric acid upon the sulphuret, so as not to wet the mouth of the decanter, and suspend the writing, by means of the glass stopper, within the decanter. By an attention to the paper the writing will become visible by degrees, as the gas rises from the bottom of the vessel.

Write with a weak solution of sulphate of iron, let it dry, and it will be invisible. By dipping a feather in tincture of galls, and drawing the wet feather over the letters, the writing will be restored and appear black.

Write with a similar solution, and when dry wash the letters in the same way with prussiate of potash, and they will be restored of a beautiful blue.

Write with a solution of sulphate of copper, wash as before with prussiate of potash, and the writing will be revived of a reddish-brown colour.

Write on paper with a solution of nitrate of bismuth; when this is dry the writing will be invisible; but if the paper be exposed to sulphuretted hydrogen gas, the words will be distinctly legible.

A letter written with a diluted solution of bismuth, becomes, when dry, illegible; but a feather dipped in a solution of sulphuret of potash, will instantly blacken the oxide, and revive the writing.

Some Experiments with the Earths.

Pour a little limewater into a wineglass, and put some solution of oxalate of ammonia, equally transparent, into another glass. If the two clear liquors be poured together, a white precipitate of oxalate of lime will immediately become visible.

Pour a little limewater into a phial, and throw some carbonic acid into it. The carbonic acid will seize the lime, and precipitate it in the state of carbonate of lime.

Take the phial made use of in the last experiment, with its contents, and convey an additional portion of carbonic acid into it. The carbonate of lime will now be re-dissolved, and the liquor rendered transparent.

Take the transparent liquid produced in the last experiment, and give it heat. The earth will now be precipitated in the state of carbonate of lime, as before.

Pour some limewater into a wineglass, and a little solution of carbonate of potash into another glass. When these two transparent fluids are thrown together, an abundant precipitate of carbonate of time will be the consequence.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

VARIETIES.

He that has never known adversity, is but half acquainted with others, or with himself.

An Obedient Child.—No object is more pleasing than a meek and obedient child. It reflects honour upon its parents for their wise management. It enjoys much ease and pleasure to the utmost limit of what is fit. It promises excellence and usefulness, to be, when age has matured the human understanding, a willing subject in all things to the government of God. No object, on the contrary, is more shocking than a child under no management. We pity orphans who have neither father nor mother to care for them: but a child indulged is more to be pitied; it has no parent; it is its own master—it is peevish, forward, headstrong, blind—born to a double portion of trouble and sorrow above what fallen man is heir to; not only miserable itself, but worthless, and a plague to all who in future will be connected with it.

The Oil from the Horse-Chestnut.—The *Abeille Medicale* contains an article on the use of the oil extracted from the horse-chestnut as a sedative in gout. In order to extract this oil, the horse-chestnuts are first ground to powder, the latter is then treated with sulphuric ether, which dissolves the oil, resin, and saponine contained in the mass; the oil is then obtained pure by evaporating the ether. Ten kilogrammes of horse-chestnuts yield ten grammes of oil. To use it, it must be applied with a fine hair brush on the part affected; if the pain is very intense, the unction should be effected circularly so as to arrive gradually to the centre. When the first application is absorbed, a second one is effected after a lapse of a few minutes, and then a third and fourth if necessary. The oiled part is then covered with blotting-paper, cotton, or flannel, and then with oilskin; the patient must be kept in perfect repose. In some cases the application of the oil causes an increase of pain for the first half-hour, after which the sedative action commences, but generally the pain gradually disappears without any aggravation.

NOTICE.

The Editor has several miscellaneous sets of the Anatomical and Botanical Drawings, which he offers at an extremely low price, and are to be obtained at 134, High Holborn. They consist of the following:—

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Dr. Coffin may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. Coffin may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 284.—Vol. IX. SATURDAY, APRIL 2, 1859. Price 1d.

DR. COFFIN'S LECTURES
AT THE LITERARY INSTITUTION, BOROUGH ROAD, BOROUGH.

As these Lectures progress, so the public appreciation of their excellence, truthfulness, and oneness of purpose progresses, evinced by the nightly increase of a highly delighted and satisfied audience, whose attention becomes so fixed upon the subject by the remarkable tact of the doctor, who much enhances the interest of the Lectures by the introduction of short, pithy anecdotes, at the same time commanding a marked attention to the great truths of his Medico-Botanic System of Medicine.

On account of the great increase in the number of the doctor's Thursday patients, he has kindly given an extra hour of his time; therefore Dr. Coffin will commence seeing patients *gratis*, at nine o'clock every Thursday morning, at the house of his Agent, Mr. T. Bean, No. 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street. It is highly requisite, that parties desirous of consulting Dr. Coffin should attend, as early as possible, at the above address, on the Thursday morning, as several patients could not see him last week on account of a great increase of their number.

THE GLEANER, No. 30.
ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

1. *Of life or vital activity.*—There is no department of philosophy around which so much unnecessary mystery has been cast, as the investigation of the character and laws of the phenomena of life; and this veil of mystery can be removed only by the vigorous adoption of those methods of research which have been proved to be most effectual in the study of physics and chemistry. To designate any of the actions of a living body as *vital*, or as affected by the *vital principle*, was long regarded as a sufficient explanation of them, and had the effect of placing a complete check upon further inquiry. The history of physical science shows, however, that *it* was once labouring under the same restraint, and that, until the true objects of investigation were understood, scarcely any advance was made. Thus, in past ages, all the movements of the heavenly bodies were attributed to the operation of some vague "principle of motion," the laws of which it was considered impracticable to attain; and even after the experienced ingenuity of Kepler had led him to the discovery of some of these laws, it was still maintained, that the powers concerned in the celestial motions could have nothing in common with terrestrial forces—a doctrine which the genius of Newton subverted, by proving the universal applicability of the laws of motion, and the existence of the attractive force between all masses of matter. Again, the simple optical fact, that when the sun's light passes through a hole, the bright image, if formed at a considerable distance from it, is always round, instead of imitating the figure of the aperture, was attributed by Aristotle to the circular nature "of the sun's light;" whilst the simple consideration, that the rays of light travel in straight lines, would, if

properly applied, have explained this phenomenon, not only in regard to the sun, but in the case of any other round luminous body placed at a sufficient distance. To attribute all the operations of life which cannot be referred to physical or chemical laws, to a "vital principle," is, in reality, to proceed just as unphilosophically as the ancients did in the cases just quoted, since a strict examination into their character will show that, although not *identical with* physical phenomena, they are analogous to them, in so far as they take place according to a regular *plan*, and present themselves under fixed *conditions;* a definite acquaintance with which would give to physiological science the same kind of precision and comprehensiveness as it is the aim of the physical philosopher to attain in *his* department of study. The laws of vital phenomena, in fact, are as open to investigation as those which comprehend the phenomena of gravity, electricity, or chemical affinity; and although the intricacy of the combination under which these phenomena are usually presented to our observation renders their laws more difficult of attainment, the success which has attended the philosophical method of inquiry of late pursued by scientific physiologists, is a most satisfactory proof that they are not beyond the reach of persevering and well-directed research.

Few terms have been employed in a greater variety of significations, or more frequently without any definite meaning at all, than the word *life*. The older philosophers regarded it as a distinct entity or substance residing in certain forms of matter, and as the cause both of their organisation and of the actions exhibited by them.* We have seen that the tendency to rest satisfied with vague hypotheses of this kind, operated in the retardation of physical science; and had it not been for the comparative prominence and simplicity of its phenomena, it is not improbable that, even at the sent day, we should hear employed in *it* such terms as the "vital principle," "organic agent," or any other equally unphilosophical refuge of those physiologists who neglect the substance to grasp at the shadow. To the term "principle" no very definite meaning can be attached. It has been remarked that "this word," characteristic of a less advanced state of science, has been generally employed (as the final letters of the alphabet are used by algebraists) to denote an unknown element, which, when thus expressed, is more conveniently analysed. Thus it has been customary to speak of the principle of gravity, the principle of electricity, or of the principle of magnetism, as the unknown causes of certain phenomena as yet imperfectly comprehended. In so far, however, as the *laws* of these phenomena are understood, they are really nothing else than *generalised expressions of the conditions* under which they occur, our conviction of the uniformity of nature (that is, of the unchangeableness of the divine plan of government) leading us to expect the same result whenever the same conditions are presented. Thus, the "law of gravitation" is nothing else than a statement of the fact, that all masses of matter attract one another in a certain ratio; the essential condition being, that two or more masses should exist, whilst the other conditions of relative bulk and distance determine the amount of force exerted by each mass upon the other. So the "law of definite proportions" in chemistry expresses the universal fact, that when different substances combine with each other, they do so in one out of several definite ratios; the essential condition here being, that two or more substances capable of uniting should be brought into the requisite proximity with each other, whilst the particular ratio in which they will unite is determined by a variety of other con-

* Every sect had its own notion of the origin and nature of this entity; some regarding it as a kind of fire, others as a kind of air, or ether, or spirit, and others, again, as merely a kind of water. The fable of Prometheus embodies this doctrine in a mythological form, the artist being described as vivifying his clay statues by fire stolen by the chariot of the sun; and whatever was the idea entertained of the character of this agent, all regarded it as universally pervading the world, and as actuating all its operations in the capacity of a life or soul, whilst a special division of it regulated all the concerns of each individual organism. The vestiges of these ideas may be traced in the expressions "vital spark," "vital spirit," "breath of life," and others which are still prevalent.

siderations, of which the chemist seeks to arrive at some precise and comprehensive expression. And as it is the whole aim of the scientific physiologist to attain similar general and definite expression of the conditions under which vital phenomena occur, it seems obvious that nothing can be really gained by the use of the term "vital principle," whilst the employment of it is really injurious in so far as it tends to limit the range of inquiry into the phenomena of life.

Still more opposed to the progress of physiological science is the doctrine propounded by one of the most distinguished philosophers of our age (Dr. Prout) that vital phenomena are to be attributed to the operation of distinct intelligent agents, superior to, and possessing the power of directing and controlling, the common forces of matter. Of these organic agents it is supposed that a series exists in every organised body; each agent possessing more or less control over all the agents below itself, and having the power of appropriating their services, till at length, in the combined operation of the whole series of agents at the top of the scale, we reach the perfection of organic existence. This hypothesis, in favour of which not a single fact can be advanced, may perhaps be best disposed of by carrying out the analogy of an army, which is suggested by the phraseology just cited. As an army is at present constituted, there is large room for the operation of intelligence in the subordinate officers or delegated powers, because it is upon them that the carrying out of the will of the commander-in-chief entirely rests, his knowledge and skill being confined to the general plan; and they have not only to choose the best means of effecting this, but to modify and accommodate it to circumstances, sometimes even acting in opposition to it, should it prove dangerous or impracticable. But if the supreme commander had a perfect control over every component individual of a large army, and possessed the means of immediately operating upon the mind of every soldier so as to cause him to execute his will without any intervening command, and if he himself possessed the knowledge and skill requisite, not only to guide the general evolutions of the *masses* composing his army, but to direct the movements of every *man* in the most advantageous manner, would he trouble himself with the intermediate machinery of subordinate generals, colonels, captains, lieutenants, serjeants and corporals, in order to convey his will and direct the operations of his troops. To imagine, then, that anything is gained by the interposition of agents, intelligent or nonintelligent, between the Deity and the materials upon which he operates, is either to set limits to his knowledge and power, or to give to those agents an office purely nominal. For, if they have any of that independence which is possessed to a certain extent by the officers of a human army, then the Almighty intelligence is not directing the operations of matter in their detail; whilst, if that detailed direction has a real existence, the function attributed to them is a nonentity.

(To be continued.)

FRACTURES.

(Continued from page 138.)

SCAPULA.

Diagnosis.—Fractures of the scapula are observed to happen most frequently at its cervix; and in this situation they have all the characteristics of a dislocation of the shoulder, for which they are not unfrequently mistaken. The shoulder is sunk, and a hollow is perceived under the processus acromion. It is distinguished by rotating the arm with one hand, at the same time applying the other to the neck of the scapula; when both bones will partake of the rotary motion, and generally a crepitus may be perceived.

Treatment.—The same treatment is required as for a fracture of the clavicle.

Diagnosis.—When the acromion process is fractured, the arm is generally much drawn forwards; but the bone being so superficial, the place of the fracture is easily distinguished.

Treatment.—The shoulder must be firmly bound and the fore-arm particularly well supported by a sling.

HUMERUS.

Diagnosis.—The head of the bone being grasped with one hand, and the elbow with the other, upon rotating the

arm, no motion will be communicated from the lower to the upper portion, and at the same time a crepitus will be distinguishable.

Treatment.—In order to bring the fractured extremities of the bone in apposition, extension must be made in contrary directions; at the same time relaxing the muscles by bending the elbow-joint. The arm is then to be encircled with a piece of soft flannel, and three splints should be applied, the outer of which should be of sufficient length to reach from the shoulder to the elbow. After which, the whole is to be secured by a flannel or linen roller, applied sufficiently tight to support the parts in the situation in which they have been placed. The fore-arm is to be supported with a sling; confinement is not in general necessary.

RADIUS AND ULNA.

Diagnosis.—The existence of a fracture of these bones may be ascertained in the same manner as directed for discovering a fracture of the humerus; or by tracing the course of the bones with the finger along their inferior surface.

Treatment.—The same treatment is also required as in a fracture of the humerus. The splints should be laid, one on the inside, the other on the outside of the arm; so that both bones may be at once effectually compressed; that on the inside should be long enough to reach the palm of the hand, by which means the wrist will be kept steady, and the radius will be prevented from rolling. They may be confined either by the application of a bandage, or by tying them with broad tapes or riband.

OS FEMORIS.

Diagnosis.—When the thigh-bone has been fractured at its neck, the limb is remarkably shortened, and exhibits the appearance of a dislocation of the os femoris upwards.

The two diseases are distinguished by the position of the leg and foot; by the position of the knee and foot; which in the former are turned considerably outwards; in the latter, inclined in the contrary direction; the toe being remarkably turned inwards, and almost backwards. By the greater or less facility with which the limb may be moved; in dislocation, it can only be bent into a small angle with the body; in fracture, it admits of being drawn up to nearly a right angle. By the accident in question most frequently happening in old people. By the crepitus which takes place upon a forcible extension of the limb.

Treatment.—To retain the divided portions of bone in apposition, various means have been proposed, and many complicated instruments have been invented for the purpose; but all attempts hitherto made have been attended with nearly equally unsuccessful results. A permanent shortening and disunion, with loss of motion in the limb, has mostly been the consequence of this deplorable accident.

Union may, however, be attempted in the following manner:—The limb being forcibly extended, large and firm compresses are to be laid upon the trochanter, and strongly bound by means of a bandage rolled round the hip, and between the thighs of the patient. A strong deal splint is next to be prepared, of sufficient length to reach some way up the side, and this is to be securely confined by means of bandages passed round the pelvis and above the knee.

Diagnosis.—The presence of a fracture in the middle of the thigh-bone is to be discovered by carefully feeling along the upper side of the bone, when a projecting point will generally be discovered; and if at the same time the joint be rotated, a crepitus and preternatural motion of the fractured part will be observable.

Treatment.—The bone being reduced to its usual position by extension of the limb, rags wetted with a cooling lotion—the liquor subacetatis plumbi dilutus—or a plaster of the ceratum saponis, should be laid upon the part, and over this the many-tailed bandage. Three broad splints should next be applied, one on each side of the thigh, and a third on the upper part; that on the outside being sufficiently long to reach from the hip to the knee; these being confined with tapes, the limb may now be placed either in an upright position, in a fracture-box, with the knee bent

to a considerable angle, or the thigh may be laid on its outside, supported by a pillow.

The patient should be laid on a hair mattress, rather than on a soft bed; and if symptoms of inflammation succeed the accident, the bandage previously applied should be frequently moistened with cold lotions; and should there be much tension and pain, they ought to be entirely loosened.

THE PATELLA.

The patella may be fractured in two directions, longitudinally and transversely. In the latter case, the upper portion is drawn up several inches among the muscles of the thigh.

Treatment.—In the longitudinal fracture, continued extension of the limb, and the application of a bandage to the knee, will be sufficient to effect a speedy union.

In cases of transverse fracture of the patella, owing to the great separation of the divided portions, it is extremely difficult to effect an union by bone, the parts being more frequently connected to each other by the interposition of a ligamentous structure. The fractured portions may be made to approach each other as nearly as appears desirable by the application of the proper bandage. The middle of a roller of considerable length is to be applied over the upper or ascending part of the patella; and being carried round the thigh just above the joint, it is to be crossed under the ham, and again on the upper part of the tibia; and having thus described the figure 8 around the joint, it is to be properly secured, and daily increased in tightness.

In order to maintain a perfect extension of the limb, a splint, well lined with wool, may be applied under the ham.

Where the transverse fracture of the patella has united by the ossific process, the bone has in some instances fully recovered its natural strength; but in those cases where the union is of a ligamentous nature, the firmness and safety of the limb always remain permanently defective.

OLECRANON.

When the olecranon has been separated from the ulna, the same retraction take place as in a fracture of the patella; and precisely the same treatment is required.

TIBIA AND FIBULA.

Diagnosis.—Fractures of these bones may be known to have taken place by the irregularity discovered upon carefully feeling along their prominent edge; by the unnatural motion at the fractured part; and by the crepitus created by pressure, or an attempt to rotate the leg.

Treatment.—The same refrigerant wash, or soap plaster, will be proper, as in fracture of the femur; and over one of these the many-tailed bandage. Two splints are then to be applied, the one on the outside, the other on the inside of the leg: the best for this purpose are Martin's whalebone splints. In applying them, care should be taken that the outside splint be long enough to reach completely from the knee to the toes. The limb may then be either laid straight out, and still further secured by the application of junks and a foot-board, or it may be laid upon its side upon soft pillows, with the knee a little bent.

THE FIBULA ALONE.

A fracture of the fibula generally happens from two to three inches above the ankle-joint. Upon moving the joint a crepitus is to be observed.

Treatment.—Splints are to be applied, and the limb treated as for a fracture of both bones; with the exception of a roller, which is to be substituted in the place of the usual bandage. It should at first be loosely applied, but afterwards gradually tightened and extented to the foot. In fracture of the fibula, however, as Mr. Pott has correctly observed, the position is not of much consequence; because, by the tibia remaining entire, the figure of the leg is preserved, and extension quite unnecessary.

(To be continued.)

ON THE PSEUDO-SCIENCES.

(*Continued from page* 151.)

In this world, this school of science, we find nothing ready-made, save the implements and subject of study; but we do find better tools and beter appliances than our ancestors possessed. 'Tis nothing that you boastingly point to optics,

chemistry, physiology, mechanics, and say, See how these have suddenly enlarged! how improved! how perfected! All this is true, but why is this? It is not contrary to the law that science is necessarily of slow growth, for experience, and the evidence of our senses, teach the reverse: the reason of these rapid strides is, that after ages of incubation, the fulness of time has arrived in their special histories. The April shower descends precipitately and unwarningly from a sky a moment ago blue and serenely beautiful; but its cloud has been long forming from the accumulated myriads of invisible vesicles of vapour. A coat of mail is knitted and jointed in a few hours, of which the numberless links each take as long to form. And so with these apparently rapid growths of science: they are not the evolution of one mind, of one moment or of one generation, but the developments of patient study, of quiet speculation, of steady and repeated experiment. Convinced of this, every scientific man looks with doubt, great doubt, on ready-made sciences. That, mushroom-like, they should spring up in a night, is, at least, a most suspicious feature in their character, if not an absolute test of their fallacy. Wisely he suspends his judgment, if he be not prepared to deny their claim to truth, until, by thought, inductive and deductive with experiment, he has tested their accuracy. Then he boldly denies their premises of argument, or, admitting these, their modes of reasoning; or, admitting both, their powers or qualities of observation. And how he is he met? He is referred to Galileo, and told of his sufferings for truth, or to Harvey and his persecution. He is told that the blood of the martyrs is the seed of the church, and all such illogical effrontery—effrontery as far as they apply to him; for such assertions are the very *petitio principii* (begging the principle or question) in dispute. Admit them martyrs, Galileo's or Harvey's, and the question is settled: they are right and you are wrong; they are persecuted and you are a tyrant. But mark the difference. How did Galileo arrive at his conclusions? and what use did he make of them? Where is the analogy? How absurd this line of argument! They require of you to believe in a dogma of their own creation, because some one did not believe in certain dogmas not of their own creation and were wrong; and they never, of course, show you the analogy between the cases, either in doctrine, discoveries, processes or results; that is to say: *somebody did not believe something which turned out to be correct; therefore you should believe everything, lest you should fall into the same error.* If this line of argument lead to anything, it at once tends to stop all inquiry into the truth of assertion or experiment, and demands a tacit belief upon the *ipse dixit* (own word) of anybody. Not that we would have the philosopher or scholar troubling his mind with all the trifling trash of the petty inquiries instituted by these pseudo-sciences; he should have higher aims. With a few commonplace tests, they are precipitated from all position, and can hold no dominion in his judgment. Thus far, then, we have given one or two tests or hints at them by which the spirits may be tried. But before applying them exactly, let us see how the *real* philosopher proceeds in *his* inquiries. Things appear strong by contrast.

Unprejudiced by preconceptions, his search is after truth, for truth's sake. He is not bent from the even tenor of his way by difficulties, dangers, or disappointments. He loses not the means of success by solely contemplating the goal of his ambition. His life is action; and he is satisfied with positive results to an inquiry instituted, provided he be sure the inquiry was logically reasoned. *Negative* results are to him, frequently, as satisfactory as the most positive sequences; and he would rather give up an hypothesis upon which rested a most beautiful and plausible theory—yes, after cherishing it most dearly—than sell his mind to deception, or give himself up to believe a lie. He does not jump at conclusions, reasoning from particular instances to general principles. He does not deal in assertions, whose accuracy he cannot demonstrate or logically prove. He is never tired of accumulation of evidence, nor in an investigation does he cry out at any moment, until he has conquered the difficulty, "Hold, enough!"

Quietly, steadily, patiently, noiselessly he works; by the midnight lamp, or in the laboratory, the dissecting-room or the studio, impatient only of interruption. He wants not the plaudits of an admiring audience, nor an advertisement in the *Times* to tell of his discoveries. Your real discoverer is generally too captious of error to court scrutiny till "time and place shall serve," and then too modest to receive praise. Yes, the mental satisfaction of knowledge acquired is too ethereal an exaltation to be approached by the sordid enjoyment which comes from the flattery of others.

But let us now proceed to examine the sources of error in scientific inquiries. There are twelve very common sources of error, which, if known, may serve as TESTS in the investigation of the accuracy of any subjects which either from their intrinsic merit or the weight of authority are presented to the acceptance of our belief.

1. Errors arising from mistakes about the meaning of terms.
2. ,, ,, ,, the substitution of names for things.
3. ,, ,, ,, substitution of assertions for facts.
4. ,, ,, ,, illogical reasoning from correct data.
5. ,, ,, ,, illogical reasoning from incorrect data.
6. ,, ,, ,, logical reasoning from incorrect data.
7. ,, ,, ,, partial instead of complete observation.
8. ,, ,, ,, mistakes in observation.
9. ,, ,, ,, incapacity for observation.
10. ,, ,, ,, the innate love of the marvellous.
11. ,, ,, ,, the system of discipleship.
12. ,, ,, ,, the system of leadership.

We will now consider these in order, illustrating what we conceive to be fallacies from various works on systems of popular delusion, whose names, however, do not appear at the head of this article, simply because we would not give them the individual importance that an appearance in a reallyscientific journal would demand for them.

1. *Errors arising from mistakes about the meanings of terms.*—Mistakes arising from a different appreciation of the meanings of terms, is one of the most common sources of error—one, too, into which even the conscientious and scientific may fall without being aware of it: hence it is of the highest importance to define clearly all words used in argument or dispute, before commencing any set of inquiries. Very often the dispute is ended by such a definition, so that those a moment ago antagonistic and ready for severe strife, find they are of the same opinion on the point in hand. Words are dangerous weapons; they require careful but tight grasping, and when used, either in attack or defence, should be so equally matched and presented, that, as in a "fair pass of foils," it matters not which we or our antagonist may select, both having the same appreciation of the same weapon.

There are certain words constantly occurring in scientific and pseudo-scientific writings, which have become (as it were) stereotyped, and which, if they have not by usuage been utterly worn from their original impression and sharp outline, still want "biting up." Some words become obsolete for want of usage, but more become obsolete in their exactest signification from being too frequently used or rather *ab*used: they have palled upon the sense as does monotony on the ear. Take a set of hackneyed words, such as "hypothesis," "theory," "fact," "experiment," "law." Now to define these words here is not our task: we will reserve this for a future occasion and another place: we merely wish to state, that these words are "suspicious characters;" we must keep an eye on them; watch them with the most careful scrutiny. Remember, that an INQUIRY is not merely asking a question; that EXPERIMENT is not merely *doing* something; that HYPOTHESIS is not *merely* the Greek for the Latin supposition, or the English guessing; that THEORY is not *merely* something visionary, or that which is not practical; that PHENOMENA are not merely wonderful appearances, or necessarily so; that the word FACTS, among such terms, is most of all suspicious, very dangerous indeed. We must look very carefully into every sentence which begins thus: "It is a well known fact," the more especially if that sentence have a "therefore" in it, or "consequently," or "so that," or any notion of a sequence.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

PHYSIOLOGY OF MAN.

(Continued from page 154.)

In the point of view which I have just considered, man stands alone: his faculties, and what he has effected by them, place him at a wide interval from all animals, at an interval which no animal hitherto known to us can fill up. The man-like monkey, the almost reasonable elephant, the docile dog, the sagacious beaver, the industrious bee, cannot be compared to him. In none of these instances is there any progress either in the individuals or the species.

In most of the feelings of which other individuals of the species are the objects, and in all which come under the denomination of moral sentiments, there is a marked difference between man and animals, and a decided inferiority of the latter. The attachment of the mother to the offspring, so long as its wants and feebleness require her aid and defence, seems as strong in the animal as in the human being, and bears equally in both the characters of actions termed instinctive. Its duration is confined, in the former case, even in social animals, to the period of helplessness; and the animal instinct is not succeeded, as in man, by that continued intercourse of affection and offices, and those endearing relations, which constitute the most exalted pleasures of human life.

Of courage, the animal kingdom offers many examples; and the moralists have celebrated the attachment of the dog to his master. It may be doubted whether we can find any instances of such feeling between animals themselves, excepting some cases of sexual unions. In general, they seem entirely destitute of sympathy with each other, indifferent to each other's sufferings or joys, and unmoved by the worst usage or acutest pangs of their fellows. Indeed, if we except some associated labours in the insect class, principally referring to the continuation of the species, and securing a supply of food, and some joint operations of the male and female in the higher classes, animals seem entirely incapable of concert or co-operation for common purposes, of combining various exertions for the attainment of a common end. This appears to arise from the limited nature and extent of their knowing and reflecting powers; to which probably we must refer their incapability of conceiving moral relations.

Laughter and weeping are natural signs in man of certain mental affections, and probably are also peculiar to him: animals are not susceptible of the emotions or states of mind indicated by these external signs.

That many animals besides man secrete tears is well known; but whether they weep from grief, is doubtful: yet respectable witnesses have represented that they do so. Steller states this of the phoca ursina; Pallas, of the camel; and Humboldt, of a small American monkey.

Whether any animals express mirth or satisfaction by laughter is more doubtful, to say nothing of the other causes of smiling or laughter in our species. The fact has been asserted, for instance, by

Le Cat, who says that he saw the chimpansé both laugh and weep. The orang-utang brought from Batavia by Mr. Abel certainly never laughs: his keeper informs me that he has seen him weep a few times.

I consider the differences between man and animals, in propensities, feelings, and intellectual faculties, to be the result of the same cause as that which we assign for the variations in other functions, viz., difference of organisation; and that the superiority of man in rational endowments is not greater than the more exquisite, complicated, and perfectly developed structure of his brain, and particularly of his ample cerebral hemispheres, to which the rest of the animal kingdom offers no parallel, nor even any near approximation, is sufficient to account for. That the senses of man and of other animals will not explain all their varied and wonderful mental phenomena, and that the superiority of man can by no means be deduced from any pre-eminence in this part of his construction, are truths too obvious to require further notice.

Some modern inquirers have gone beyond this general statement; and have ventured to particularise, in the brains of animals and of man, the organ or residence of each propensity, feeling, and intellectual power. I cannot pronounce on the accuracy and completeness of the mental and cerebral survey executed by Messrs. Gall and Spurzheim; nor pretend to judge of the exactness and fidelity with which the numerous positions are marked down in their very complete and well-filled map of the brain. They appeal to observation for the confirmation or refutation of their statements; but my observations are not numerous or varied enough for these purposes. No one can refuse to them the merit of patient inquiry, careful observation, and unprejudiced reflection. They have performed the useful service of rescuing us from the trammels of doctrines and authorities, and directing our attention to nature, whose instructions cannot deceive us. Whether the views of Gall and Spurzheim may be verified or not, our labours in this direction must be productive, must bring with them collateral advantages. Hence they may be compared to the old man in the fable, who assured his sons, on his death-bed, that a treasure was hidden in his vineyard. They began immediately to dig over the whole ground in search of it; and found, indeed, no treasure; but the loosening of the soil, the destruction of the weeds, the admission of light and air, were so beneficial to the vines, that the quantity and excellence of the ensuing crop were unprecedented.

The diseases peculiar to man may be deemed a more fit subject for pathology than natural history; but, as these unnatural phenomena arise out of the natural organisation and habit of the body, and the dispositions of the animal economy, they cannot be entirely passed over.

While the causes of disease in general are so obscure, and the exact series of phenomena has been ascertained in so few instances, it is hazardous to set down any particular affections as belonging exclusively to man: other animals might be affected, if exposed to the same causes. Those in a wild state have very few and simple diseases, if any: domesticated ones have several; and they are more numerous in proportion as the subjugation is more complete, and the way of life differs more widely from the natural one. The diseases of our more valuable domestic animals are sufficiently numerous to employ a particular order of men; and the horse alone has a distinct set to his own share. The miserable canary-birds seem to be equally in want of professional assistance; for, in the list of disorders to which they are subject, we find inflammation of the bowels, asthma, epilepsy, chancres of the bill, and scabs. In man, the most artificial of all animals, the most exposed to all the circumstances that can act unfavourably on his frame, diseases are the most numerous; and so abundant and diversified as to exhaust the ingenuity of the nosologist and fatigue the memory of the physician. Perhaps nosological catalogues would afford the most convincing argument that man has departed from the way of life to which nature had destined him; unless, indeed, it should be contended that these afflictions are a necessary part of his nature—a distinction from animals of which he will not be very likely to boast.

The accumulation of numbers in large cities, the noxious effects of impure air, sedentary habits, and unwholesome employments, the excesses in diet, the luxurious food, the heating drinks, the monstrous mixtures, and the pernicious seasonings, which stimulate and oppress the organs, the unnatural activity of the great cerebral circulation, excited by the double impulse of our luxurious habits and undue mental exertions, of the violent passions which agitate and exhaust us, the anxiety, chagrin, and vexation, from which few entirely escape, and then re-acting on and disturbing the whole frame, the delicacy and sensibility to external influences, caused by our heated rooms, warm clothing, inactivity, and other indulgences, are so many fatal proofs that our most grievous ills are our own work, and might be obviated by a more simple and uniform way of life. Our associates of the animal kingdom do not escape the influence of such causes. The mountain shepherd and his dog are equally hardy; and form an instructive contrast with a nervous and hysterical fine lady and her lap-dog; the extreme point of degeneracy and imbecility of which each race is susceptible.

The observations of Humboldt confirm the position, that individuals, whose bodies are strengthened by healthy habits in respect to food, clothing, exercise, air, &c. are enabled to resist the causes which produce disease in other men. He paints to us the Indians of New Spain as a set of peaceful cultivators, accustomed to uniform nourishment, almost entirely of a vegetable nature, that of their maize and cereal gramina. "They are hardly subject to any deformity. I never saw a hunch-backed Indian; and it is extremely rare to see any who squint, or who are lame in the arm or leg." In the countries where the inhabitants suffer from the goitre, this affection of the thyroid gland is never observed among the Indians, and seldom among the Mestizoes.

He repeats the same testimony very strongly concerning various tribes in South America; as the Chaymas, Caribs, Muyscas, and Peruvian Indians. Winterbottom says he never saw nor heard of a case of hare-lip among the native Africans.

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(Continued from page 155.)

Proceed as in the last experiment, but instead of carbonate of potash, pour a solution of Epsom salts into one of the glasses. When these transparent fluids are poured together, a mixed precipitate of carbonate of magnesia and sulphate of lime will be produced.

For another experiment, take in the same manner, separately, limewater and a solution of alum. The union of these solutions will produce a mixed precipitate of alumina and sulphate of lime.

If a strong solution of caustic potash and a saturated solution of Epsom salts be mixed, the union of these transparent fluids will produce also an abundant precipitate, but this will consist of magnesia and sulphate of potash.

To a glass of water, suspected to contain carbonic acid, add a small quantity of any of the other acids. If carbonic acid be present, it will become visible by a sparkling appearance on the sides of the glass and surface of the fluid.

Prepare two glasses of pure water, and into one of them drop a single drop of sulphuric acid and mix it with the water. Pour a little muriate of barytes into the other glass and no change will be perceived; pour some of the same solution into the first glass, containing the sulphuric acid, and a white precipitate of sulphate of barytes will be produced.

Prepare two glasses of water as before, conduct the experiment in the same way as the last, but instead of muriate of barytes, use nitrate of lead. In this case sulphate of lead will be precipitated.

Fill a glass tumbler half full of limewater; then breathe into it frequently, at the same time stirring it with a piece of glass. The fluid, which before was perfectly transparent, will presently become quite white, and if suffered to remain at rest, real chalk will be deposited.

Experiments with the Metals.

Prepare two glasses of rainwater, and into one of them drop a single drop of sulphuric acid. Pour a little nitrate of silver into the other glass and no change will be perceptible. Pour some of the same solution into the first glass, and a

white precipitate of sulphate of silver will appear.

Prepare two glasses as in the last experiment, and into one of them put a drop or two of muriatic acid. Proceed as before, and a precipitate of muriate of silver will be produced.

Take two glasses of rainwater, and into one of them put a drop of sulphuric acid, and a drop or two of muriatic acid: proceed as before with the nitrate of silver, and a mixed precipitate will be produced, consisting of muriate of silver and sulphate of silver.

Take the glass containing the mixed precipitate of the last experiment, and give it, by means of a lamp, the heat of boiling water. The sulphate of silver, if there be a sufficiency of water, will now be redissolved, and the muriate of silver will remain separate at the bottom of the vessel. This experiment exhibits a method of separating these metallic salts whenever they occur in a state of mixture.

Mix one ounce of litharge of lead with one drachm of pulverised muriate of ammonia, and submit the mixture to a red heat in a clean tobacco-pipe. The increase of temperature will separate the ammonia in the form of gas, and the muriatic acid will combine with the lead. When the compound is well melted, pour it into a metallic cup, and you will have a true muriate of lead of a bright yellow colour, the brilliancy of which may be much heightened by grinding it as usual with oil. In this state it forms the colour called patent yellow.

Take one ounce of red lead, and half a drachm of charcoal, in powder, incorporate them well in a mortar, and then fill the bowl of a tobacco-pipe with the mixture. Submit it to an intense heat in a common fire, and when melted, pour it upon a slab. The result will be metallic lead completely revived.

Take a little red lead, expose it to an intense heat in a crucible, and pour it out when melted. The result will be metallic glass, and will furnish an example of the vitrification of metals.

Drop upon a clean plate of copper, a small quantity of solution of nitrate of silver; in a short time a metallic vegetation will be perceptible, branching out in very elegant and pleasing forms, furnishing an example of metallic revivification.

Dissolve an ounce of acetate of lead in about a quart or more of water, and filter the solution. If this be put into a glass decanter, and a piece of zinc be suspended in it by means of a brass wire, a decomposition of the salt will immediately commence, the lead will be set at liberty, and will attach itself to the remaining zinc, forming a metallic tree.

Procure a phial with a glass stopper accurately ground into it; introduce some copper wire, then entirely fill it with liquid ammonia, and stop the phial so as to exclude all atmospheric air. If left in this state, no solution of the copper will be effected. But if the bottle be afterwards left open for some time, and then stopped, the metal will dissolve and the solution will be colourless. Let the stopper be now taken out, and the fluid will become blue, beginning at the surface and spreading gradually through the whole. If this blue solution has not been too long exposed to the air, and fresh copper filings be put in, again stopping the bottle, the fluid will once more be deprived of its colour, which it will recover only by the readmission of air. These effects may thus be repeatedly produced.

Pour concentrated nitric acid upon pieces of iron, and very little action will be seen: but if a few drops of water be added, a most violent effervescence will immediately commence; the acid will be decomposed with rapidity, clouds of red nitrous gas will be evolved in abundance and a perfect solution of the metal effected.

Take any solution of iron, a chalybeate water for instance, and add a small quantity of succinate of ammonia; in a little time a precipitate will be visible, being succinate of iron. By this test, the quantity of iron in any solution may be accurately ascertained.

In like manner add sulphuretted hydrogen to a solution of lead, and a deep brown precipitate will be occasioned. This is an effectual mode of detecting this and some other pernicious metals.

Dissolve some quicksilver in nitrous acid, and drop a little of the solution upon a bright piece of copper. If it be

then gently rubbed with a bit of cloth, the mercury will precipitate itself upon the copper, which will be completely silvered. This experiment is illustrative of the precipitation of one metal by another.

If a little nitro-muriate of gold be added to a fresh solution of muriate of tin, both being much diluted with water, the gold will be precipitated of a purple colour, forming that beautiful pigment called powder of Cassius.

Take a phial with a solution of sulphate of zinc, and another containing a little liquid ammonia, both transparent fluids. By mixing them, a curious phenomenon may be perceived—the zinc will be immediately precipitated in a white mass, and if then shaken, almost as instantly redissolved.

If a colourless solution of arsenic in caustic potash be poured into a colourless solution of copper, a green precipitate will be produced, forming an arseniate of copper similar to an ore found in the Cornish mines. These metals may be thus reciprocally detected.

(To be continued.)

NOTICE.

The Editor has several miscellaneous sets of the Anatomical and Botanical Drawings, which he offers at an extremely low price, and are to be obtained at 134, High Holborn. They consist of the following:—

1 set of 5, beautifully coloured	15*s.*
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Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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Keeps constantly on hand all the Remedies used in Dr. COFFIN'S Practice; also Dr. COFFIN'S "Guide to Health," "Treatise on Midwifery," "Treatise on the Generative Organs," "A Course of Twelve Lectures," and "Botanical Journal."

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All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 285.—Vol. IX. SATURDAY, APRIL 16, 1859. Price 1d.

DR. COFFIN'S LECTURES
AT THE LITERARY INSTITUTION, BOROUGH ROAD, BOROUGH.

As these Lectures progress, so the public appreciation of their excellence, truthfulness, and oneness of purpose progresses, evinced by the nightly increase of a highly delighted and satisfied audience, whose attention becomes so fixed upon the subject by the remarkable tact of the doctor, who much enhances the interest of the Lectures by the introduction of short, pithy anecdotes, at the same time commanding a marked attention to the great truths of his Medico-Botanic System of Medicine.

On account of the great increase in the number of the doctor's Thursday patients, he has kindly given an extra hour of his time; therefore Dr. Coffin will commence seeing patients *gratis*, at nine o'clock every Thursday morning, at the house of his Agent, Mr. T. Bean, No. 7, Bridgehouse-place, Newington Causeway, two doors from Great Union-street. It is highly requisite, that parties desirous of consulting Dr. Coffin should attend, as early as possible, at the above address, on the Thursday morning, as several patients could not see him last week on account of a great increase of their number.

THE GLEANER, No. 31.
ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

Any such idea of a delegated control over the actions of living beings, is not only quite useless and unnecessary in the explanation of facts, but is totally unsupported by the analogies of nature, and by what we know of the Divine Government in general. No reflecting mind has any doubt that this earth and its inhabitants form a system of which every part is perfectly adapted to the rest, and of which all the actions and changes, however in appearance independent, or even contrary, have one common tendency, the ultimate of the creatures of infinite benevolence. It cannot be regarded as an improbability that the other spheres and systems, whose countless multitudes, revealed by the aid of science, impress our minds with the nearest conception of infinity of which our finite comprehension is capable, are peopled with beings, if not similar in structure with ourselves, at least equally worthy of the Creator's care. In the government of our planet, itself but a point in the vast universe, we are able to recognise, to a small extent, the laws according to which its material operations are conducted; and we discern indications of those which affect the moral condition of sentient beings. So far as we can understand the mutual adaptation of these laws, we everywhere see them working to the same end; and we entertain the highest anticipations of that beauty and harmony which will be revealed to us, when our imperfection of knowledge shall be extended and corrected by the light of eternal truth. Should we not consider it degrading to the dignity of Infinite Wisdom to suppose, at the creation of each world, he had found it necessary to delegate to a subordinate the control over its working, instead of so devising the original plan, in all its details as well as in its general arrangements,

that the various changes which it was his intention to produce should be harmoniously effected by the uniform operation of the same all-sustaining energy? It cannot be said that the adaptation of means and ends is less evident in the scheme of the universe at large, than it is in the structure and actions of a single organised being. And if it be the aim of the physical philosopher to discover the simple but majestic plan of which this wonderful adaptation is the result, why should not the physiologist directly refer all the operations of the living body to the same primary agency, and seek, in like manner, to comprehend the scheme of government?

If the application of the term "life" to some independent agent, which is assumed to be the immediate cause of the peculiar attributes of plants and animals, be found useless or injurious, it may be reasonably inquired what is to be understood by it. Even our most elementary notion of a *living* being, based upon the phenomena presented by the simplest organism that can maintain an independent existence, is so complex as to render it impossible to express it in the form requisite for a concise definition, and although various attempts have been made to convey in words the essential idea which it involves, none has been yet successful enough to satisfy the scientific physiologist. It has been already pointed out that there is a class of phenomena to which we give the designation *vital*, which is even more different in its character from those of physics and chemistry than they are from each other, and that these vital phenomena are only manifested by bodies of that peculiar structure which we term organised. By the term "life," then, we most appropriately designate the state or condition of a being that exhibits vital actions, and it is thus placed in opposition to the term "death," which implies the state of a being in which those actions have altogether ceased, and whose structure is subject to no other forces than those of inorganic matter, which speedily effects its decomposition; whilst both are distinguished from the state which may be designated as that of dormant vitality, in which the whole vital activity of the being has been temporarily suspended, without any such impairment of the structure or composition of the organism as shall prevent the resumption of that activity when the requisite conditions are supplied.

The distinctive characters of vital actions will be best understood if we take a general view of the series of phenomena presented by a living being of the simplest kind, from its origin to its final decay. For this purpose we must have recourse to the humblest forms of cryptogamic plants, which consist of mere aggregations of *cells*, every one of which may be regarded as a distinct individual, since it is perfectly independent of the rest, and performs *for* and *by* itself all the functions of growth and reproduction. We shall find in the operation of the simple *cell* an *epitome*, as it were, of those of the highest and most complex plant; which again bear a close correspondence with those that are immediately concerned in the nutrition and reproduction of the animal body. The functions peculiar to animals will not enter into the present inquiry, not being common to all organised beings. A *cell*, in physiological language, is a closed vesicle, or minute bag, formed by a membrane in which no definite structure can be discerned, and having a cavity which may contain matters of various consistence; every such cell constitutes an entire organism in such simple plants as the protococcus nivalis (red snow) or palmella cruenta (gory dew); for, although the patches of this kind of vegetation which attract our notice are made up of vast aggregations of such cells, yet they have no dependence upon one another, and the actions of each are an exact repetition of those of the rest. In such a cell every organised fabric, however complex, originates. The vast *tree*, almost a forest in itself—the zoophyte, in which we discover the lowest indications of animality—and the *feeling*, *thinking*, *intelligent* MAN, each springs from a germ that differs in no obvious particular from the permanent condition of one of these lowly beings. But whilst the power of these latter is restricted, as we shall see, to the continual multiplication of new and distinct individuals like itself, those of the former enable it to produce new cells which remain in close connection with

each other; and these are gradually converted, by various transformations of their own, into the diversified elements of a complex fabric. The most highly organised being, however, will be shown to consist in great part of cells that have undergone no such transformation, amongst which the different functions performed by the individual in the case just cited, are so distributed that each cell has its particular object in the general economy, whilst the history of its own life is essentially the same as if it were maintaining a separate existence.

(To be continued.)

ANOTHER TRIUMPHANT ACQUITTAL.

THE medico-botanical system of Dr. COFFIN is daily, and, we may say, hourly increasing in repute, and becoming more and more appreciated.

The faculty generally having been so thoroughly defeated in their narrow-minded attempts to oppose and decry it, and finding that its great truths and health-bestowing qualities are so widely disseminated and so practically known, have been obliged to abandon all direct means of opposition, and thrown their whole weight of persecution upon our agents, endeavouring by every little-minded, unworthy means to fasten upon every accident that happens to a patient through that patient's neglect of proper caution and inattention to the directions of our agent, in order if possible to gain a verdict of manslaughter against him. But how signally they have all failed! The agents have been invariably most honourably acquitted, and all the dishonour has fallen upon the persecutors.

It is well known to all our readers what malevolence many members of the faculty have evidenced in the persecution of our agents, how triumphantly they have been always defeated; and in the late trial of Mr. Crick, of Bedford, another glorious example of honourable acquittal has been added to our list. We challenge the faculty to produce the like results in such cases. In proof of which we cite the Hetton tragedy as an example, the perpetrator McHugh being now expiating his crime in prison. Mr. Crick is gloriously acquitted, and the persecution he has suffered will more and more redound to his benefit, while deserved obloquy and opprobrium will as surely settle upon the heads of his little-minded, bigoted and disreputable persecutors. All honour to the judge! all honour to the jury! And to the persecuting portion of the faculty, we say, that one and all of us are prepared for all their nefarious efforts and machinations: give us a clear stage, we ask no favour, and we are fearless of the results.

We now give an account of the meeting held in the Assembly-rooms of Bedford, extracted from the *Bedfordshire Mercury*, of March the 28th, which no doubt will be acceptable to our readers, also inserting the observations of the editor, which indeed are truthful, liberal, just, and does him much credit. The Bedfordshire paper not being sent to us direct, accounts for the article not being inserted in last Journal. We reserve the account of our doctor's lecture for the next number.

DR. COFFIN'S LECTURE ON MEDICAL BOTANY.

IN these days, when men of almost every class of society are proposing and carrying out extensive reforms, it is not to be expected that the medical profession, amongst which there are so many scientific, intellectual, and enterprising men, should stand still and see every one else effecting reformations of no ordinary kind in the different bodies to which they respectively belong. For many years past there have been gentlemen of great talent in the medical profession who have thought that herbs have in them those properties which are calculated to relieve human beings who are suffering from any disease, and that the use of the mineral poisons should be wholly dispensed with. Some of them have travelled in all parts of the globe in search of herbs with which they were acquainted, and in order to ascertain the character of others as a medicine of which they knew nothing. Among these gentlemen is the celebrated metropolitan herbalist, A. I. COFFIN, Esq., M.D., whose visit to Bedford it is our intention to bring under the notice of our readers. Dr. COFFIN has spared no pains in investigating the nature of these herbs, and introducing them into his

extensive practice. He has wandered through the woods of America, through the forests of Spain, France, and those of almost every country in the known world, to discover new plants to *him*, and has acquired the most useful information. By the great exertions which he has made in thus reforming the practice of his profession, he has laid himself open to the censure of many of his fellow-members; but he appears to be well content with it, believing that he is labouring in a good cause. Dr. COFFIN has recently published a work entitled "A Guide to Health," a book which shows that the author is possessed of considerable ability, and thoroughly understands his subject. This work was frequently alluded to in the course of the meeting, a report of which we give below.

On Monday evening last, a lecture was delivered in the Assembly-rooms by Dr. COFFIN, on "Medical Botany." The interest which the public have taken in this subject, and especially since the trial of Mr. Crick, has been very great, and it was expected that there would be a large attendance; which anticipation was realised, the room being well filled with a highly respectable company. The lecturer addressed his audience for nearly an hour and a half, and displayed the greatest energy throughout, accompanying his remarks at times with a lively strain of humour.

On the motion of Mr. Garner, Mr. Stephens, of London, was called to the chair.

The Chairman thanked them for the honour they had conferred upon him by calling upon him to preside over such a meeting as that. He thought there must be something wrong somewhere, that they should elect a perfect stranger, as he was, to all present, with the exception of one or two, to the chair. Surely there must be a screw loose somewhere. But something wrong in Bedford! the town of Bedford! that town which was noted for its schools, that was connected with the name of Russell, and which was associated with freedom, liberty, education, and reform! But he believed it was so. At one time a man in Bedford, for conscience' sake, had been deprived of his liberty, so far as his body was concerned, but they could not shackle his mind, though they had kept him twelve years in a jail. They knew to whom he referred—to Bunyan. (Applause.) That had cast a blot upon Bedford which he believed was not quite out. A trial had recently taken place, in which a friend of theirs had been sadly and abominably persecuted. He was happy to say that the bench was not composed of such men as it was two hundred years ago. The people at that time had not the honest judges they had now. Let them go where they would, and they would not find such justice and liberty as there was in England. (Hear, hear, and cheers.) There was much that might be said with respect to drugs. It was extremely difficult to introduce anything new into the system which was contrary to the general views of the profession, for if any one attempted to do so they were sure to be opposed. There were Dissenters in Bedford, who had dissented from the Established Church. Dr. COFFIN and he were dissenters from the general medical system, as the Dissenters were those who separated from the Establishment. In order to show them that the medical profession, if they had the power, would prevent them from dissenting from their views, he would read an extract from the *Medical Times* of a recent date:—"We are disappointed to find that the legislature does not protect them sufficiently from the competitions of the quack and the pretender, who, in ignorant communities, are sometimes more valued than learned and accomplished practitioners." Was not that monstrous? If it had been a system that was all right, would it require any propping up by the government? A sober man required no holding up; it was a drunken man who needed that. They might rest assured that if ever a reform of any kind were introduced, it would be appreciated by the lower before the higher classes. It would be seen by the following quotation from Lord Macaulay that this was the case with Bunyan:—"His books were widely circulated among the lower classes. One of them—the 'Pilgrim's Progress'—was scarcely known to the learned and polite, and had been for more than a century the delight of pious cottagers and artisans before it took its place as a classical work in

libraries. At length critics condescended to inquire where the secret of so wide and so durable a popularity lay. They were compelled to own that the ignorant multitude had judged more correctly than the learned, and that the despised little book was really a masterpiece."—It was exactly the same with any improvement in medicine; it was sure to be approved of by the lower classes before the aristocracy. In reference to the case of their friend, Mr. Crick, he would just make a few remarks. It had been said by some of the medical profession in this town that lobelia was a poison—a most deadly poison—and that a guinea-pig had been killed in two minutes by it. Now he would show that every doctor who said that was mistaken. He would tell them how they might make some experiments. Let them get an ounce of lobelia, and stuff it down any animal's throat, and they would find it would thrive. He knew children would thrive with it. Immediately after hearing of the case of their friend, he was passing through Leadenhall-market, and he purchased two guinea-pigs. Before he bought them he made an agreement with the seller that if he brought them back at the end of a week, he (the seller) would buy them again at half-price. He took them home and stuffed them out with lobelia for several days. (Laughter). His daughter said to him that it was ridiculous to give them that stuff, to which he replied that he knew it was. At the end of the week he took the guinea-pigs back, and asked the man in what state they were. The seller said they were as good as ever. (Laughter.) He called again in the course of three weeks, and found that one had been sold, and that the other was in a better state than ever it was. (Renewed laughter.) He believed that Dr. Barker could not kill a guinea-pig with lobelia. Harvey, when he discovered the circulation of the blood, met with opposition of the most determined character. He would read an extract from Harvey's own works, which would show them how a man who introduced something new would be treated by the profession :—"Should any, by a more sedulous observation make the least step towards new discoveries in medicine, the hatred and envy of the medical profession would swell against him as a legion of devils against virtue, the whole society will dart their malice at him and torture him with all the calumnies imaginable, without sticking at anything that should destroy him root and branch. For he who professes to be a reformer of the art of physic must resolve to run the hazard of the martyrdom of his reputation, life, and estate." They must, then, expect to be used in the same manner. Great credit was due to those medical men in the town who had stood aloof from the recent abominable prosecution. In conclusion, he would congratulate their friend upon the result of the trial.

(To be continued.)

CURES BY MEDICO-BOTANIC TREATMENT,

AT NEWCASTLE-ON-TYNE.

CURE OF GLEET.

H—— S——, a case of gleet, the sequel of a gonorrhœa treated by one of the faculty; weakness of the kidneys, derangement of the liver, suffering also from common cold. This patient declared the gleet to be cured, and his general health greatly improved, after taking two quarts of the infusion of white poplar-bark, composition powder, golden seal, cubebs, with an aperient pill of aloes, rhubarb, gum myrrh and ginger.

CURE OF INFLAMMATION.

Jas. Douglas, attorney's clerk, Newcastle.

Symptoms.—Inflammation of the gums, face much swollen, indigestion, and general symptoms of influenza. This gentleman had taken a large quantity of medicine, from one of the faculty, for indigestion, but experienced no benefit. The pain in his gums was most excruciating, and he had not been able to sleep for four nights in succession. I commenced with him at ten o'clock at night, and about eight o'clock the next morning, the pain entirely ceased, and he gradually recovered, and was able to attend to business on the fourth day; he would have gone out sooner, but as the swelling receded slowly, I was afraid of a relapse, and advised

him to stay at home, but he had no return of the pain.

Treatment.—Lobelia emetic—it took three teaspoonfuls to vomit—copious draughts of vervain and yarrow tea, bottles of hot water to the feet, rubbed the swelled face with tincture of myrrh and cayenne, and applied hot oatmeal poultices until the pain ceased. After treatment, medicine for indigestion as per "Guide," and infusion of composition, valerian, and skullcap, with aperient pills for the bowels.

CURE OF WORMS AND INDIGESTION.

J—— S——, foreman joiner, Newcastle.

Worms, loss of appetite, and bad digestion, heat and itching of the anus.

Treatment.—Two pills every morning, of gum myrrh and cayenne; an injection every night of composition powder, half an ounce; wormseed, quarter of an ounce; male fern, quarter of an ounce, well mixed; one teaspoonful to half a pint of warm water for each injection. Decoction of wormwood, bogbean, raspberry-leaves, oak-bark, ginger-root, and Spanish juice —one wineglassful four times a day. Cured in eight days.

March, 1859.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

TESTIMONY TO DR. COFFIN'S "GUIDE TO HEALTH."

TO A. I. COFFIN, ESQ.

DEAR SIR,—I beg to acknowledge with heartfelt gratitude the benefit I have received from your invaluable work, "The Guide to Health." I knew but little of the qualities of herbs, and less of their application to diseases; but after having well read and studied the treatment laid down therein, I treated myself and family, and succeeded in restoring them to health; myself also. I have been instrumental in curing a number of cases after given up to die by the old-school doctors—two cases of pulmonary consumption—which has caused great excitement. From that time up to the present others have been applying to me daily. I have succeeded to an extent that would occupy more space than I have time at present to communicate. I have set a portion of time apart from my business in order to benefit suffering humanity. I shall do all in my power to further the progress of your invaluable system.

I am, dear Sir, yours very truly,

WM. STANGER.

Weymouth, 5th March, 1859.

REMARKABLE CURE OF A CASE OF CONSUMPTION

OF THREE YEARS' STANDING,

After the case had proved incurable in the hands of the Faculty.

THE subject of this case was Edward Wilson, aged about twenty-eight, a printer by employment, and residing at the back of No. 30, St. Vincent-street, Ladywood, Edgbaston, Birmingham. The history of his case, as narrated by himself, is as follows:—He states that in the summer of 1855, one day while having lunch in the printing-office, he was seized with a fit of an epileptic description, and fell down,

and was carried home quite insensible; during the fit he was convulsed. His family surgeon was sent for, who came with all dispatch, and directed that he should immediately have six leeches applied to his temples. The order was obeyed, and the bites bled profusely. During the night he had another fit. The surgeon, Mr. C., continued to attend him, and gave him medicines under which he became rapidly weaker. At the end of about three weeks, he was taken with a cough, which, despite of this same surgeon's remedies, became worse and worse. After a long time, no improvement showing itself, both the patient and his parents wished to have further advice, and accordingly sent for another surgeon, Mr. B., who quickly, as is wont, obeyed the summons. He looked at him superficially, as no doubt as he was also wont, and without inquiring minutely into the previous history of the case, and examining carefully into the physical signs, as he ought to have done, he hastily pronounced *his opinion, "that the disease would not signify, he would soon be better."* His mother, surprised at such an opinion being given, said: "Sir, I think you must be mistaken, for my son has been very ill for twelve months."—"Oh, indeed! has he?" said the doctor; and then told the patient he must come over to his surgery that he might examine him carefully. The patient, labouring under extreme weakness, with much difficulty obeyed this mad request, and went; and after examining him, told him he had better be careful of himself—an advice he did not require to pay for. He also gave him something he called by the misnomer medicine, which the patient, on taking a small quantity, says, "It made him ten times worse." He thought it would have killed him, it made him so weak. Again the former surgeon was sent for, and was made acquainted by the family of the interview with Mr. B., and with the effects of the medicine, which latter the family doctor wished to see: on examining what remained of it, he pronounced it altogether unsuited, and as positively injurious, in such a case. For a length of time he continued again under the treatment of his medical attendant, but failing to do him any good, and partly, no doubt, to get rid of him, he advised him to go to the country. Observe, he was a club patient! and some of these are both troublesome and unremunerative. Club practice is both a farce and a disgrace. They are little better than fools who can expect to have the best skill and the choicest remedies of a properly educated medical man for three shillings per annum. He cannot have the notions of a gentleman, or a proper respect for his profession, who could be so mean as to let himself out to the public at three shillings a head per annum. It is a wonder English people have not more independence than to ask or expect such service at so unfair a price. It is a proof, as well as a characteristic, of the worthlessness of the allopathic quackery, when it can be had at such a price. I would rather give my services for nothing to those who were too poor, or so mean as to ask or expect it at three shillings per year. The patient went to the country, as by direction, but derived little apparent benefit from the change. He returned home, and about this time he was taken with *spitting of blood*, which, as is usual, came on very profusely every night on going to bed. This may be accounted for by the patient leaving the warm atmosphere of his sitting-room and going into the colder of his bed-room, and the application of the cold sheets to the surface of his body, all which circumstances conspired to propel the blood from the surface, and cause it to accumulate upon the weaker and more internal parts: hence the diseased portion of lungs was obliged to yield or break, and pour out its bloody contents by the *vis a tergo*. The expectoration of blood continued for about a fortnight: at length, by an effort of nature, the bleeding ceased of its own accord, and he gained some additional strength, by taking plenty of nourishment, and throwing physic to the dogs. But his recovery was very partial. His cough continued to annoy him exceedingly, and he laboured under great weakness, emaciation, shortness of breathing and night sweats. After much entreaty on the part of some of his workmates, particularly Mr. George Beck, he was at length persuaded to try the botanic system of medicine. At this time, about

the beginning of March, 1857, he came for advice at the Botanic Dispensary in Worcester-street, and continued under the botanic treatment to the latter end of May, 1858. At the end of this time, a period of about fourteen months, the disease appeared completely overcome, and has not returned at all up to the present time, April, 1859. It is right to state that only part of this time he was treated at the Botanic Dispensary by Mr. Caldwell. The reason was this: it was found absolutely necessary, for the removal of his cough, to resort to lobelia emetics, as every other gentler means had hitherto failed to remove it. An emetic was prescribed by Mr. Caldwell, but his parents having imbibed the absurd prejudice against the lobelia inflata, refused to allow him to take it at home, and put it out of his reach. The patient, however, feeling the importance of carrying out the instructions given him, was determined, if possible, not to be thwarted from his purpose. He was at this juncture advised to place himself under a Mr. Trueman, who was very expert in administering what are called Thomsonian courses of medicine. This Mr. Trueman could not only give the course of medicine at his own house, but would, if necessary, accommodate the patient afterwards for the night: his house was in fact a botanic hospital on a small scale. Mr. Trueman thus, from time to time, gave this patient, within a period of about nine months, *twenty-seven* courses of medicine, which included twenty-seven lobelia emetics, and which had the desired effect of almost entirely removing his cough. At the end of this time, he again came under treatment at the Botanic Dispensary, on account of great weakness, which no doubt was partly caused by giving the emetics more frequently than his strength was able to bear. However, by a short course of good restorative medicines at the Botanic Dispensary, he was soon convalescent, and able to attend as comfortably to his employment as ever he did. For his cure he is no doubt much indebted to the energy and expertness of the humble mechanic, Mr. Trueman.

Treatment.—The general course pursued was, the administration of strong restorative medicines, accompanied by such active stimulants as cayenne pepper, ginger and expectorants, in which lobelia inflata was the active ingredient, and above all, lobelia emetics.

Such are the principal facts of this case, and such the result—as far as the consumption is concerned a cure. There is still one matter which has a tendency to keep the patient weaker than he would otherwise be, and that is, occasional recurrence of those epileptic attacks, which did not trouble him so long as he laboured under the consumptive symptoms.

GEORGE CALDWELL, M.R.C.S.I.

DIGESTION.

DIGESTION commences with the introduction of the food into that part of the alimentary canal, in the walls of which is secreted the fluid destined for its solution. In the higher animals, this secretion is restricted to the gastric cavity or stomach; and hence it is named the gastric juice. The only chemical change which the food appears to have undergone, before being submitted to this, is that which is effected by the admixture of saliva in the mouth; a peculiar animal principle contained in this fluid having the power of converting starch into sugar. The process thus commenced in the mouth, is checked in the stomach, the acid character of the gastric fluid being unfavourable to it: it is recommenced, however, in the intestinal canal, after that acid has been neutralised by the alkali of the bile and the pancreatic fluid. The great purpose of the *gastric* digestion appears to be, to dissolve the *albuminous* and *gelatinous* constituents of the food, and, by the withdrawal of these, the remainder are usually reduced to a state of fine division, in which they are more easily acted upon. In regard to the constitution of the gastric fluid, there is, at present, much diversity of opinion, and it does not seem improbable that it may vary in different animals. It appears essentially to consist, however, of a free acid (either the hydrochloric, acetic or lactic), which is the real solvent, and of an animal principle in a state of change, which acts as a *ferment* and disposes the animal compounds to solution. Water slightly acidulated with these acids is capable of dissolving albuminous compounds with the aid of a high temperature.

The solvent action of the gastric fluid is aided by the movements of the walls of the stomach, which are produced by the successive contractions and relaxations of their muscular fibres. The purpose of this motion is obviously to keep the contents of the stomach in that state of constant agitation which is most favourable to their chemical solution, and particularly to bring every portion of the alimentary matter into contact with the lining of the stomach, so as to subject it to the action of the solvent fluid which is poured forth from it. Thus little by little the reduction of the alimentary materials to the homogeneous, pulpy mass termed chime, is accomplished. This escapes into the intestine as fast as it is formed, through the pyloric orifice, which closes itself to solids, but allows liquids to pass; whilst the solid residue is continually subjected to the same action, until its solution has been effected. There is no doubt, however, that a portion of the nutritious matter dissolved by the gastric fluid is at once absorbed into the blood-vessels of the stomach, and never passes into the intestinal tube, nor into the special lacteal system of vessels. That the action of the gastric fluid is in all respects one of a purely chemical nature, there can be no longer any question. When drawn direct from the stomach of man or of the lower mammalia, it is found to possess the power to dissolve various kinds of alimentary substances, provided that these are submitted to its action at a temperature equal to that of the body, and are frequently agitated. The solution appears to be in all respects as perfect as that which naturally takes place in the stomach, but a longer time is required to make it—a difference which is easily accounted for, when the impossibility of fulfilling all the conditions under which gastric digestion takes place, is borne in mind. The quantity of food which a given amount of gastric juice can dissolve is limited, and its solvent power is chiefly regulated by the quantity of acids which it contains.

The *chyme* which passes into the intestinal tube, is commonly a grayish, semifluid and homogeneous substance, possessing a slightly acid taste, but being otherwise insipid. When the food has been of a rich, oily character, the chyme possesses a creamy aspect; but when it has contained a large portion of farinaceous matter, the chyme has rather the appearance of gruel. The state in which the various alimentary principles exist in it, has not yet been accurately determined: the following, however, may be near the truth: The albuminous compounds, whether derived from the animal or from the vegetable kingdom, whether previously possessing the form of fibrin, of casein, of gluten, &c., are all reduced by solution to the condition of albumen; but a part of these compounds may still remain undissolved in the chyme of the intestine. Gelatine will be dissolved, or not, according to the previous condition of the substance containing it; for, if this be a tissue which does not readily yield gelatine to hot water, the gastric fluid will have little influence upon it. The gummy matters of plants are dissolved, when they exist in a soluble form; but starch is not dissolved unless it has been previously acted upon by the saliva, save in the case of the graminivorous birds, and ruminant mammals, in which the provision for the mechanical reduction of this element of the food is greater than in other tribes. Sugar, whether introduced as such, or formed by the transformation of starch, is undoubtedly reduced to a state of complete solution, and is, probably, taken up by the blood-vessels as fast as it is dissolved. Oily matters, whether of animal or vegetable origin, are reduced to minute particles, and these are dispersed through the other constituents of the chyme. Most other substances, as the woody fibres, all the firmer cell-walls, and the resinous matters of plants, the horny matter, yellow fibrous tissue, epidermis, and other thick-walled cells of animals pass unchanged from the stomach, and undergo no subsequent alteration in the intestinal canal, and form part of the fæcal matter which is discharged from it. On passing into the small intestines, the chyme soon becomes mingled with the biliary and pancreatic secretions, which appear to effect important changes in its character, though the nature of their respective agencies has not yet been clearly made out. It may, however, be pretty certainly stated, that by the excess

of alkali which they contain, they neutralise the acid of the gastric juice, so that thenceforth there is no further solution of albuminous compounds, but the conversion of starch into sugar, which was interrupted in the stomach, now recommences, and is probably carried on whilst the food is passing through the small intestines; and further, that either by their separate or their combined actions, the fatty matter of the chyme is reduced to that state of fine division which is known as an emulsion, and that it is thus rendered capable of being received into the absorbents. Thus, then, during the continued passage of the food along the upper part of the alimentary canal, the processes of reduction and solution are still carried on, those operations being gradually performed in the intestines which would have interfered with the digestion of albuminous matters if performed in the stomach; and the prolongation of this process being also the means of preventing the too rapid entrance of those saccharine and oily matters into the blood, which are only taken in it with a view to being speedily eliminated by the respiratory process for the maintenance of the animal temperature. It is chiefly in warm-blooded animals that we find the farinaceous or starchy substances, supplied by plants, entering largely into the composition of the food; and notwithstanding the evidence we possess, that they are actually received into the vessels, yet there is a difficulty in detecting them under any form in the blood or chyle, in the healthy condition of the system. It is obvious, then, that their removal from the intestinal canal, by the process of absorption, must take place slowly; and thus we seem to have the explanation of the prolongation of the intestinal tube in herbivorous animals. It has been supposed that the contents of the intestinal canal are subjected to a sort of second digestion in the cæcum, for the purpose of dissolving any albuminous matters which have not been previously reduced, especially in those animals in which the cæcum is of large size in proportion to the stomach; and this idea seems to derive confirmation from the fact that the secretion of the cæcum has been found to possess an acid reaction. It cannot, however, be at present regarded as more than a probable hypothesis. The residuary, undigested portions of the food, mingled with the excrementitious portion of the biliary and pancreatic secretions, together form the principal part of the fæcal matters which are discharged from the large intestine; but there is strong reason to believe, that the putrescent matter which, in the mammalia especially, gives the peculiar odour and appearance to the excrement, is not derived from either of those sources, but is a real excretion, separated from the blood by the glandulæ that are so thickly set in the intestinal walls, and especially at the lower part of the small intestine.

ON THE PSEUDO-SCIENCES.

(*Continued from page* 163.)

We must remember how we use the terms CAUSE, EFFECT, LAW. That which we call cause is at best only an effect of a great cause; and some so-called causes are probably only minor effects of some major cause unknown to us; that effects are resultants of our admitted causes, and that they are dependent upon one another, as rivers and seas; and we must remember, lastly, that to know the meaning of the term LAW in scientific language, requires considerable instruction and much more education.

2. *Errors arising from the substitution of names for things.*—"What's in a name? That which we call a rose by any other name would smell as sweet." Of course it would to Juliet, because she was aware, in the case in hand, that the qualities of "the thing" were not altered by this substitution; nor would it be of the slightest moment if we were, with Juliet, in all the cases to which we refer, equally informed. But this is not so, and it is impossible it could be so at all times.

From several works before us upon "Spiritual Rappings," "Clairvoyance," "Mesmerism," &c., we can find numerous examples. Let us analyse the first; namely, "Spiritual Rappings." The *thing* in question—that is, admitting it to be something—is a manifestation from the spirit world to this natural world, and through our material bodies to our imma-

terial minds. The book says, "The facts are these (reader, beware of facts!)—the medium sits or stands in a room near a table; the inquirer asks, 'Are there any spirits present?' whereupon a tap or flutter is heard in affirmatory answer. 'Will the spirit of —— appear?' is next inquired; and sometimes the request is granted, and —— spirit appears. Any question put by the inquirer through the medium is then answered, either in relation to the present, the past or the future." Without proceeding further, let us observe, that sound is a physical phenomenon, produced by the forcible meeting of two material substances, and thereby causing such a set of undulations in the atmosphere as shall, by striking upon the tympanum of the ear, give that sensation, to which we apply the term "hearing." Now, if these sounds be physical, as all sounds must be, they are necessarily not spiritual, for spirit is immaterial, and, according to this definition, can produce spiritual or immaterial effects only, unless, as in its conjunction with an organism or body, it have a material agent and suitable apparatus. Rappers do not point out any such agency, nor show any organism; nay, they boldly assert, and get the spirits to endorse their statements, that spirit, and spirit only, produces this sound. But we as boldly affirm, and that upon experience and experiment, that, if there be rappings, they must be physical, and if physical, they cannot be spiritual. Now, at first, it would appear that this subject scarcely comes under this division, inasmuch as we have shown that it is the substitution of a name for *nothing;* yet, it must be remembered that what we call "nothing" and believe to be nothing but gross deception, these "rappers" vaunt as equal in integrity to the prophecies of old, or the direct revelation of God to man, and then impudently attach it to the physical sciences as a method of physical research. The worst effect of a nomenclature is, that the moment we have given anything a name, it more or less stops inquiry into its history and nature, especially if the name have a popular signification. In cases like the present, where a positive name is given absolutely to nothing, it gives that nothing an existence in the minds of the uninitiated, and thus far has a created power, so to speak, that is, makes something out of nothing; but in other cases, where a name is given which more or less defines some qualities of the thing described, the thing having a real existence, this naming often stops inquiries, as in the other case, and we substitute it for the qualities of things; that is, if the thing be named properly, some of the qualities are substituted for all the qualities, or the mind rests satisfied with some while we might know many more. This is remarkably the case in all partially developed subjects, and is, at the same, a cause of that partial development. In therapeutics, for example, opium has been called a narcotic; many persons, when they want a narcotic, give opium, not as opium, but as a narcotic, and only a few look into the thing further, and perceive that opium is something more, and is a compound of many diverse and extraordinary substances of different effects. And so we might say of almost every vegetable drug in the pharmacopœia. Now what is the result of all this? Why, therapeutics consist in great measure of a system of names; and how could we expect otherwise? Names are prescribed—that is, are substituted—for things, and of course you can get names only as the result.

(To be continued.)

EXPLANATION OF ANATOMICAL TERMS

USED IN THE ARTICLES UPON DISLOCATIONS AND FRACTURES.

Spine .....Backbone.
Clavicle .....Collarbone.
Humerus .....Bone of the arm between the shoulder and elbow.
Radius and ulna...Two bones of the lower part of the arm.
Patella .....Kneecap.
Femur .....Thighbone.
Tibia .....Larger bone of the leg.
Fibula .....Smaller bone of the leg.
Sternum .....Breastbone.
Coccygis .....Smallest bones at the bottom of the back.
Scapula .....Bladebone.

All the performances of human art, at which we look with praise or wonder, are instances of the resistless force of perseverance.

ON THE STUDY OF CHEMISTRY.

THE various operations of Nature, and the changes which take place in the several substances around us, are so much better understood by an attention to the laws of chemistry, that in every walk of life the chemist has a manifest advantage over his illiterate neighbour. And it may be remarked, that in case of failure or disappointment in any particular line of commercial manufacture, the scientific chemist has resources as various as the productions of the country in which he lives, to which the uneducated man has no access.

Were parents aware of this truth, every youth would be instructed in the first principles of natural philosophy and chemistry, as *the means* of qualifying him for managing with advantage the concerns with which he might be intrusted. If "knowledge is power," surely the *love* of knowledge and a taste for accurate investigation are the most likely means of conducting him into that path which leads to opulence, respectability, and rational enjoyment.

Moreover, it is the necessary consequence of an attention to this science, that it gives the habit of *investigation*, and lays the foundation of an ardent and inquiring mind. If a youth has been taught to receive nothing as true but what is the result of *experiment*, he will be in little danger of ever being led away by the insidious arts of sophistry, or of having his mind bewildered by fanaticism or superstition. The knowledge of *facts* is what he has been taught to esteem; and no reasoning, however specious, will ever induce him to receive as true what appears incongruous, or cannot be recommended by demonstration or analogy.

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Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

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All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

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AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 32.

ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

In the first place, then, the cell takes its origin from a *germ*, which may be a minute *atom*, not visible without a microscope of high power. This atom appears, in its earliest condition, to be a simple particle of a round form; but it gradually increases in size, and a distinction becomes apparent between its transparent exterior, and its coloured interior. Thus we have the first indication of the *cell-wall* and the *cavity*. As the enlargement proceeds, the distinction becomes more obvious, the cell-wall is seen to be of extreme thinness and perfectly transparent, and to be the same in texture, whilst the contents of the cavity are distinguished by the colour, red or green, according to the species. At first they, too, seem to be the same, but a finely granular appearance is then perceptible, and a change gradually takes place, which seems to consist in the union of the minute granules into atoms of more distinguishable size and form. These atoms, which are the *germs* of new cells, seem to be at first attached to the wall of the parent cell; afterwards they separate from it, and move about in its cavity, and at a later period, the parent cell bursts and sets them free. Now this is the termination of the life of the parent cell, but it is the commencement of a life of a new production, since every one of these germs may become developed into a cell, after precisely the foregoing manner, and will then, in its turn, propagate its kind by a similar process. By reasoning upon the foregoing history, we may arrive at certain conclusions, which will be found equally applicable to all living beings. In the first place we witness the origin of the cell in the reproductive action of a pre-existing organism—a phenomenon peculiarly characteristic of life. There is no sufficient reason to believe that there is any exception to this rule. So far as we at present know, every plant and every animal is the offspring of a parent, to which it bears a resemblance in all essential particulars, and the same may be said of the individual cells, of which the composite animal and vegetable fabrics are composed. It does not always seem requisite, however, that a definite germ-particle should have been prepared by the parent cell, for there appear to be cases in which new cells originate, in which no distinct germs can be detected; still the fluid contained must have been brought about by cell agency. The first stage of cell-formation consists in the appearance of a number of atoms forming a whole, from which cells grow; and these new cells bear the same relation as if they had originated in distinct germs or reproductive atoms.

The first stage in the development of the germ thus furnished into a new cell, is the production of the requisite material. This, however, is effected only in the vegetable kingdom, for even the simplest animal cell appears entirely dependant for its means of growth upon a ready-prepared supply of its material. The materials which the plant requires are simply water, carbonic acid, and a small

quantity of ammonia; for the first two supply it with oxygen, hydrogen, and carbon, in the condition requisite for the production of saccharine or gummy matter, whilst the ammonia furnishes azote for the albuminous matter, which is required by every vegetable cell as an essential material for its development.

The next stage of cell-development is the appropriation of this new product to the enlargement of the living cell-structure, a phenomenon obviously distinct from the above.

We now come to the act of organisation itself, which seems to consist of a continuation of the same kind of change—that is, a new arrangement of the particles—producing substances which differ both as to structure and properties from the materials employed, but which may be so closely allied to them in chemical composition, that the difference cannot be detected: thus we find that in animals, muscle produces muscle, bone generates bone, nerve develops nerve, in continuity with it, all at the expense of the materials supplied by the very same blood. Every kind of cell has its own peculiar endowments, and generates in its interior a compound peculiar to itself. The nature of this compound is less immediately dependant upon the nourishing materials which are supplied to the cell, than upon the original inherent powers of the cell itself, derived from its germ, having a distinct vitalising agency exerted by the cell upon its contents.

The vitalising influence must be exerted upon a certain portion of the contents of every cell that is capable of reproducing itself, for it is in this manner that those germs are produced, in which all the wonderful properties are inherent, that are destined to manifest themselves when they are set free from the parent cell. This power of *reproduction* is one of those which most remarkably distinguish the living being, and we shall find that, in the highest animal, as in the humblest plant, it essentially consists in the preparation of a cell-germ which, when set free, gradually develops itself into a structure like that from which it sprang. The reproductive atoms or cell-germs are formed, like the tissue and the contents of the parent cell, from the nourishing materials which it has the power of bringing together and combining; and in their turn they pass through a corresponding series of changes, and at length produce a new generation of similar atoms, by which the race is destined to be continued. Notwithstanding the mystery which has been supposed to attach itself to this process, it is obvious that there is nothing in reality more difficult to understand in the fact, that the parent cell organises and vitalises the nourishment which it has formed, so that it should form the germ of a new individual possessing similar properties with itself, than in incorporating the same material with its own structure, and causing it to take a share in its own actions.

Finally, the parent cell having arrived at its full development, having passed through the whole series of changes which is characteristic of the species, and having prepared the germs by which the race is to be propagated, *dies* and *decays;* that is, all those operations which distinguish the living organised structure from inert matter, cease to be performed, and it is subjected to the influence of chemical forces only, which speedily occasion a separation of its elements and cause them to return to their original forms, namely, water and carbonic acid. There is evidence, however, that the death and decay of these cells composing animal and vegetable bodies are incessantly taking place during the whole life of the being, and that the maintenance of its healthy or normal condition depends upon the constant removal of the products of that decay, and upon their continual replacement. If, on the one hand, these products be retained, they act in the manner of poisons, being quite as injurious to the welfare of the body as the most deleterious substances introduced from without. On the other hand, if they be duly carried off, but be not replaced, the conditions essential to vital action are not fulfilled, and the death of the whole must be the result. Now it is to be observed, that, as plants obtain the materials of their growth from water and carbonic acid, taking the carbon from the latter and setting free the oxygen, so do they require, as the condition for their decay,

the presence of oxygen, which may reunite with the carbon that is to be given back to the atmosphere. If secluded from this, the vegetable tissues may be preserved for a long time without decomposition. Generally speaking, indeed, they are not prone to rapid decay, except at a high temperature; and hence it is that we have so little evidence in plants of the constant interior change of which mention has just been made. Its existence, however, is made evident by the fact, that a continual extrication of carbonic acid takes place, to an amount which sometimes nearly equals that of the carbonic acid decomposed, and of the oxygen set free, in the act of nutrition.

MEDICAL BOTANY AND THE APPROACHING ELECTION.

We are on the eve of a general election. I would say, Medical Botanists, this is no time for slumber! Awake to vigorous, energetic action! Embrace the opportunity that will be afforded you, on the approaching canvass, to expose the present legalised system of medical monopoly, which admits the practice of so much petty tyranny by the illiberal and narrow-minded conduct of its professors. Tell your representatives that you intend to choose your own doctor, that you have a right to do so, and that you will not rest satisfied until you can do so, without being subject to annoyance from the present legalised staff. Tell them you must have the *fortieth section* of the Medical Reform Act of 1858 expunged from the statute-book, and that a proper indemnification of your own medical practitioner must be secured. Arise in your strength, assert your rights, let your influence be felt, your claims must then be recognised, and the general election of 1859 may prove an era in the history of Medical Botany.

Lastræa Filix Mas.

Oxford, 11*th April*, 1859.

DR. COFFIN'S LECTURE AT BEDFORD.

(*Concluded from page* 173.)

Dr. Coffin, who was received with loud and prolonged cheering, then proceeded to address the meeting. He remarked that it was one of the most important subjects to know how they were to get well when they were sick, to know how to wipe away the tear from the cheek of the sorrowful, and to relieve those who were laid on a bed of languishing. The man who would throw a clog in the way of this, was an enemy to the human family, let him be who he may. (Cheers.) The medical profession, with some exceptions, were doing the very thing which he had just mentioned. He was not speaking of Dr. Barker, but he should directly. (Hear, hear, and laughter.) Every step in the way of reform had been met with opposition: it was so with everything that was known. Poor Windsor got stoned out of Bristol, because he was for lighting up the town with gas. "Light the town with gas!" said they, "why you will be blowing the lot of us up!" (Laughter.) It was exactly the same with railways. He remembered being on a coach in France, and the driver said to him, pointing to an embankment at a distance, "There is the Boulogne and Amiens Railway." He (the lecturer) said to him, "That will spoil your trade, won't it?" The driver replied, "Oh, no! nobody will be such a fool as to go and get smashed upon that." (Laughter.) But they had the railway, and there was not a diligence upon the road: the journey used to occupy twenty-six hours, but now it could be done in four or five. In medicine there must be great reform, because the great mass of the practitioners have been totally ignorant of their profession. The medical men of this country were men of power, influence, and money; and if a man should only dare to tear away the veil and impart knowledge to others, he would be opposed in the most obstinate manner by those men. Every mother knew when her child was sick, and why not know how to relieve it? He had attempted to tear away the veil, he had taught people to think for themselves, and by so doing he had brought down upon himself the envy and hatred of the profession. He did not believe that what would kill a man would cure, and that what would make a man drunk would make him sober. He should just like to make every medical man take his own medicine a week. (Laughter.) The system which he used was a system which allowed anyone to investigate it

—it courted inquiry; and anything which did not do that was a humbug in society. That morning a farmer from Essex had brought his wife for him to see; she was suffering from rheumatism most dreadfully. He was a regular jolly-looking English farmer; he looked first-rate. (Laughter.) He (the lecturer) said to him, "Suppose you had a heavy load, and your two horses were unable to move it, what should you do?"—"Why, put on another horse, to be sure." (Laughter.) "You would not put on the horse to pull in an opposite direction?"—"No, no, that would be no use!"—"Then," said he, "that is just the state of your wife's health; the doctors, instead of checking the complaint, have only been adding to it." He remembered once travelling in a coach in the state of Ohio. There had been no rain for some time, but they were moving very slowly. All at once they came to a standstill; the coachman came to the door, and, touching his hat, said, "I am afraid, gentlemen, you will have to get out, for we are stuck in the mud." (Laughter.) There being a lady in the coach, they were anxious that she, at all events, should stay inside, it being very muddy. The gentlemen accordingly got out. A man went and procured a pole from a neighbouring forest, and placed it under the hind axletree. We all put our shoulders under, and away went the coach. Now, supposing they had put the lever under the front axle-tree, what would have been the consequence? Why, the coach would have stuck where it was. He believed the general system of medicine was much after that fashion. In his opinion, in nine cases out of ten, mineral poisons acted exactly the same as the lever under the front axle-tree. When a doctor came to a patient and found him rather feverish, he often wanted to take away blood. The only means of existence was the blood, and yet the doctor wished to deprive a man of so essential a property. But the Great Architect had given them certain herbs which would cool the blood more than all that. He begged to differ with Dr. Barker in the statements which he had made at the trial. Dr. Barker was quite mistaken when he stated that lobelia was a poison. He (the lecturer) had expected that Dr. Barker would have been there; he had invited him, in as polite a manner as he was able, to be present. But he was not there; and they might let him know that the lecturer believed he had talked of matters of which he was totally ignorant, and that there was a man there who would correct them. He would bet Dr. Barker £100 (but it was very ungentlemanly to bet with a man behind his back), but he would undertake to lay down £100, which should be distributed amongst the poor of the town, if Dr. Barker could prove that lobelia was a poison. (Cheers.) Then Dr. Barker had said that there were only two sorts of lobelia, which was another proof of his ignorance of the subject. Dr. Welch was once a witness in a trial in America, and was asked by the counsel how many kinds of lobelia there were, to which he replied—two. He (the lecturer), who was also a witness, was asked the same question, and he answered that there were thirty-nine, and that five of them were growing within a mile of Dr. Welch's house. The man looked a fool before the court, being totally ignorant of what he was saying. He should liken the case of Dr. Welsh to that of Dr. Barker. [The lecturer here asked the permission of his audience to pull off his coat, as he was getting rather warm, and having to go out at the close, he might take cold. He had to lecture in London on the following evening, and he must therefore reserve his voice. The request was responded to by loud cheering and laughter. Having divested himself of that garment, he proceeded.] He looked now like a workman. (Laughter.) An Indian once told him that there was a certain herb which would cure a rattlesnake's bite. The lecturer described the manner in which he had tested the experiment on a viper, and stated that as soon as the viper had received the juice of the herb into its system, it died. The cause of this was that the viper was of a poisonous nature and the herb antipoisonous, and death occurred as soon as a collision between these two properties took place. Mr. Thurnall had said that lobelia was a most dangerous poison, and it should be given with great caution. Of course it should be used with caution: nobody would ever think of giving beef-steaks to

a child. In lobelia they could give as much as they liked. Let them tell Dr. Barker or Mr. Thurnall (for he supposed they were not there) that he would meet them there on that rostrum at any time if they would give him proper notice, and discuss the matter: he would ask them what they considered a poisonous dose; he would take twice and even four times the quantity, and would drink the whole off before a body of spectators. (Cheers.) Dr. Letheby had stated that fifteen grains would be sufficient to destroy life. When he heard it, he took out his pencil and made a calculation; he had introduced three thousand pounds avoirdupois into this country, so that they would find that he had given sufficient to kill no less than one hundred and ninety eight thousand of Her Majesty's subjects. (Laughter.) Their friend Mr. Crick had had as much as from ten to fifteen pounds at his house. He would say a word or two with regard to the judges of England. They had taken a noble stand. (Hear, hear.) At one time Mr. Crick would have been conducted to a felon's cell, and have been deprived of the society of his wife and family. But Judge Pollock said, "No; there is nothing against the man. He is only responsible for what took place during the week, and we have evidence to show that the child improved under his treatment, and that it lived for a week after it had taken any lobelia." Thank God, they had honest judges. (Hear, hear.) It had also been said that two teaspoonfuls was a poisonous dose; but he had given from fifteen grains to five ounces at a dose, and it had proved an efficacious medicine. He did not wish to injure Dr. Barker in public opinion, but he was only for making matters straight which he believed had been misrepresented. He would not have dared to have stood and sworn as Dr. Barker and Mr. Thurnall did. Last year the Poisons Bill was brought before the House of Lords, and Earl Granville was chairman of the committee. Among the poisons mentioned in the bill was lobelia. He wrote to Earl Granville, and stated that his lordship was labouring under a delusion, that lobelia was as harmless as water, and that it was not an acro-narcotic poison. Earl Granville replied to his letter with his own hand. He (the lecturer) was summoned before the committee as a witness, when he again stated that lobelia was not a poison. Dr. Taylor was there, and said "Lobelia is a poison." He (the speaker) replied, "I can assure you that it is not a poison, for I have taken half an ounce, and here I am." He afterwards wrote to Dr. Taylor on the subject, but received no reply from him. Earl Granville with his own hand could answer his letter, but the pettit-minded Taylor would not even condescend to reply. The lecturer here eloquently submitted the claims of Medical Botany to the attention and investigation of the public at large. He had instructed the public mind, and that had mortally offended the doctors. He was desirous of doing good to his fellow-creatures. By the principles of Medical Botany it was within the reach of the mother to know how to treat her child in the first stage of disease. The speaker stated that at one time in America he was suffering from "consumption;" he had been given up by no less than nine medical men, and in that condition left to die. He was at that time an assistant at a surgery, but living with his mother. An Indian woman from the wild woods one day went into his mother's house, and having looked at him, left the room. She then told his mother that she could cure her son for a gallon of cider. (Laughter.) "A gallon of cider! why you shall have a hogshead," said his mother. The woman accordingly went and procured some herbs from the wood, and made him a mixture. He drank it, and he rapidly recovered. Now that poor ignorant woman—ignorant did he say? she knew more than all the nine doctors put together—had restored him to life again. One day, as he was recovering, his master called to see him, and intimated to him that he would soon be able to return to the surgery. "I shall never return," said he. He then explained to his master that the woman had cured him, and offered him a recipe. But the man indignantly refused it, and he (the lecturer) believed that were he to offer Dr. Barker a copy of his "Guide to Health," he would treat it in the same manner. (Laughter.) From that time he became a herbalist. Let them not condemn Medical Botany until they had

tried it. If they were ill, let them go to Mr. Crick, and they would find that he was a man who well understood what he was doing. [Our want of space forbids us giving the closing exhortations of Dr. COFFIN to thoroughly investigate the science of Medical Botany.]

Mr. Garner then proposed the following resolution:

"That this meeting sympathises with Mr. F. W. Crick for the anxiety and inconvenience caused by the late unjust prosecution, and congratulates him upon the result of the trial."

Mr. Scott, in a speech of considerable length, seconded the resolution, which was carried *nem. con.*

Mr. Crick thanked the meeting for their sympathy. He remarked that instead of this gross prosecution making a serious impression upon him, it had turned out to be one of the greatest blessings.

A vote of thanks to Dr. COFFIN, for his interesting lecture was carried unanimously.

Dr. COFFIN briefly returned thanks, and said it was very gratifying to see so large an audience present, as he understood that there were two or three other important meetings in the town.

The Chairman announced that it was the intention of Dr. COFFIN to stay at his agent's in Harpur-street, and give advice gratis from eight to one on the following day.

The proceedings then terminated.

On Tuesday morning, we understand a large number of persons visited Mr. Crick's, and received the advice of Dr. COFFIN gratis.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

WE beg to inform our patrons and subscribers that we are unavoidably compelled to postpone our usual illustration, but will make the omission right by giving two illustrations next time, the subjects of which will be Pennyroyal and Mountain Flax.

EXPERIMENTS IN CHEMISTRY.

(Continued from page 168.)

IF a colourless solution of galls be added to a solution of bismuth in nitric acid equally, a brown precipitate will be produced. This is a distinguishing characteristic of this metal.

Alloy a piece of silver with a portion of lead, place the alloy upon a piece of charcoal, attach a blow-pipe to a gasometer charged with oxygen gas, light the charcoal first with a bit of paper, and keep up the heat by pressing upon the machine. When the metals get into complete fusion, the lead will begin to burn, and very soon will be all dissipated in a white smoke, leaving the silver in a state of purity. This experiment is designed to show the fixity of the noble metals.

If oxide of cobalt be dissolved in ammonia, a red solution will be produced different in colour from that of all other metallic oxides.

If nickel be dissolved in nitric acid, a beautiful green solution will be formed.

The oxide of this metal is used to give a delicate grass-green to porcelain.

When colourless prussiate of potash is added to a solution of titanium, this metal will be precipitated also of a green colour.

Add a little colourless solution of galls to a clear solution of antimony in nitro-muriatic acid, and the metal will be precipitated of a pale yellow colour.

If a solution of tungstate of potash be poured into a solution of the green sulphate of iron, a yellow precipitate will fall down. By this experiment the distinguishing characteristic of this metal is exhibited.

If a solution of the green sulphate of iron be dropped into a nitro-muriate of gold, the last metal will be immediately precipitated. In this state it is often employed in gilding china.

If flowers, or any other figures, be drawn upon a riband or silk with a solution of nitrate of silver, and the silk, moistened with water, be then exposed to the action of hydrogen gas, the silver will be revived, and the figures, firmly fixed upon the silk, will become visible, and shine with metallic brilliancy.

By proceeding in the same manner, and using a solution of gold in nitro-muriatic acid, silks may be permanently gilt at a most trifling expense, and will exhibit an appearance the most beautiful that can be conceived.

To a similar solution of gold add about a fourth part of ether; shake them together, and wait till the fluids separate; the upper stratum, or ethereal gold, is then to be carefully poured off into another vessel. If any polished steel instrument or utensil be dipped into this solution, and instantly plunged into water, the surface will have acquired a coat of pure gold, being a very elegant and economical mode of preserving steel from rust.

If nitro-muriate of platina be mixed with a fourth part of its bulk of ether, and the mixture suffered to settle, the ethereal solution of platina may be decanted as in the preceding experiment. Polished brass, and some other metals, immersed in this solution will be covered with a coat of platina. This process may be applied to many useful purposes.

Prepare a very dilute and colourless solution of platina by dropping a small quantity of the nitro-muriate of that metal into a glass of water. If a single drop of the solution of muriate of tin be added to this, a bright red precipitate will be instantly produced. A more delicate test than this of any metal cannot be conceived.

If a morsel of the dried crystals of nitrate of silver (not the lunar caustic) be laid on a piece of burning charcoal, the metallic salt will immediately deflagrate, throw out the most beautiful scintillations that can be imagined, and the surface of the charcoal will be richly coated with metallic silver.

To a colourless solution of nitrate of mercury, add an equally colourless solution of sub-borate of soda. This will produce a double decomposition, and form a bright yellow precipitate of borate of mercury: giving an instance of difference of colour in metals, by their union with different acids.

Into a diluted solution of sulphate of copper, pour a little liquid caustic ammonia. This will precipitate the copper of a bluish white. During its examination, however, the precipitate will be redissolved, and a beautiful blue liquid, called aqua celestis, will be the result.

Dissolve a few crystals of nitro-muriate of gold in about eight times their weight of pure water; place a thin slip of charcoal in the solution, and heat the whole by means of a sand-bath. When the solution has acquired nearly a boiling heat, the gold will precipitate itself on the charcoal, in its metallic splendour, forming a singular and beautiful appearance. This experiment is designed to show that metals become insoluble the moment they impart their oxygen to foreign bodies.

Proceed as in the last experiment, and submit the vessel with its contents to the rays of the sun. Here the metal will be reduced, and the charcoal as effectually gilt as before. This is illustrative of the deoxidising power of the sun's rays.

Drop a little leaf gold into nitro-muriatic acid and it will instantly disappear. This experiment is designed to show the great solubility of the metals, when submitted to a proper menstruum.

Pour a little purified nitric acid into one wineglass, and muriatic acid into another; and drop a little leaf gold into each. Here neither of these corrosive acids will act at all upon the metal. The gold will remain untouched. Now pour the whole contents of the two glasses together, and the metal will disappear, and be as effectually dissolved as in the last experiment.

If a little metallic arsenic in powder be mixed with a few zinc filings, and then treated with diluted sulphuric acid, arsenuretted hydrogen gas may be collected, which burns with a peculiar kind of lambent white flame.

If a portion of this gas, issuing from a very small tube, be set on fire, and then immersed in a large glass receiver of oxygen gas, and the stream of arsenurretted hydrogen kept up by the pressure of the bladder, a blue flame of uncommon splendour will be produced.

Take an amalgam of lead and mercury, and another amalgam of bismuth, let those two solid amalgams be mixed by triture, and they will instantly become fluid.

If a little pure white calomel be rubbed in a glass mortar with a little colourless solution of caustic ammonia, the whole will become intensely black.

A little of the solution of sulphate of manganese being exposed in a glass phial to the light of the sun, its rose colour will entirely fade. This is another experiment to show the deoxidising power of the sun's rays. If the phial be removed into a dark room, the original colour of the solution will be restored.

Dissolve about a drachm of pulverised sulphate of copper in a little boiling water, and an equal quantity of powdered muriate of ammonia in a separate vessel, in hot water. By mixing the contents of the two glasses, a quadruple salt will be formed which gives a yellow colour to the solution while hot, and becomes green when cold.

Mix three grains of sulphur with nine grains of dry nitrate of silver, and lay the mixture in a small heap on an anvil, or on any piece of solid metal. If the mixture be now struck smartly with a cold hammer, the sulphur will inflame, but no detonation will ensue. This is an instance of a metallic salt being decomposed, and a combustible substance inflamed by percussion.

If the experiment be repeated, and the mass be struck with a hot hammer, the mixture detonates, and the silver is reduced.

Pour a solution of nitrate of silver into a glass vessel, and immerse a few slips of copper in it. In a short time a portion of the copper will be dissolved, and all the silver precipitated in a metallic form. If the solution, which now contains copper, be decanted into another glass, and pieces of iron added to it, this metal will then be dissolved, and the copper precipitated, yielding a striking example of peculiar affinities.

Melt a portion of grain tin, and pour it into a metallic cup. Allow it to cool till it is congealed to some depth, then pierce the solid crust, and carefully pour out that portion which is still liquid. If what remains in the vessel be suffered to cool entirely, it will present rhomboidal crystals of considerable size, formed by the assemblage of a great number of small needles longitudinally united.

Treat silver in the same way, and we shall procure a metallic mass crystallised in quadrangular or octohedral prisms. There two experiments will succeed better if the metal be poured into a vessel with an orifice in the bottom, which must be stopped with a proper plug, and this removed as soon as the upper crust hardens; the liquid metal will then run out, and that which is congealed will exhibit a regular crystallisation.

Form an amalgam with four parts of silver leaf and two of mercury, and dissolve this amalgam in diluted nitric acid. Then add water to the solution, equal to thirty times the weight of the metals employed, and put the whole aside for use. If an ounce of this solution be at any time poured into a phial, and a small piece of soft amalgam of silver be dropped in, filaments of reduced silver will shoot from it, and extend upwards, in the form of a shrub. This appearance of arborescence is called the tree of Diana.

(To be continued.)

UNCIVILISED BEAUTIFYING.

Dr. Coffin having given his most interesting lecture upon the manners and customs of the North-American Indians, we, for the amusement of our readers, give an account of the several customs of the uncivilised portion of the human family, who deem the embellishment of their persons in the manner about being stated, the height of beauty.

The operation of tattooing, or puncturing and staining the skin, has prevailed in various degrees, in most parts of the world; but it has been adopted most extensively and generally in the South-Sea Islands, where it is considered as highly ornamental. The art is carried to its greatest perfection in the Washington or New Marquesas Islands; where wealthy and powerful individuals are often covered with various designs from head to foot. The elegance and symmetry of the tattooed figures are as much admired by them as those of dress are by us. We may pardon their simplicity in attaching so much value to the multiplicity and arrangement of these punctures, when we consider that those satisfactory tests of personal merit, the stars, ribbons and orders, of which more civilised men are so justly proud, are not yet known to them. For performing the operation, the artist uses the wing-bone of a tropic bird, which is rendered jagged and pointed at the end like a comb, sometimes in the form of a crescent, sometimes in a straight line, and larger or smaller according to the figures he designs to make. This instrument is fixed into a bamboo handle about as thick as the finger, with which the puncturer, by means of another cane, strikes so gently and dexterously that it scarcely pierces through the skin. The principal strokes of the figures to be tattooed are first sketched upon the body with the same dye that is afterwards rubbed into the punctures, to serve as guides in the use of the instrument. The punctures being so made that the blood and lymph ooze through the orifice, a thick dye, composed of ashes from the kernel of a nut, mixed with water, is rubbed in. This occasions at first a slight degree of smarting and inflammation; it then heals, and, when the crust comes off after some days, the bluish or blackish-blue figure appears. "When once the decorations are begun, some addition is constantly made to them at intervals of from three to six months; and this is not unfrequently continued for thirty or forty years, before the whole tattooing is completed. We saw some old men of the higher ranks who were punctured over and over to such a degree that the outlines of each separate figure were scarcely to be distinguished, and the body had an almost Negro-like appearance. This is, according to the general idea, the height of perfection in ornament, probably because the cost of it has been very great, and it therefore shows a person of superlative wealth."—*Langsdorff.*

The colour of the tattooed figures resides in the cutis or true skin; the cuticle is not affected. Contrary to what we should have inferred, from the generally assumed principle of constant change in the component particles of animal bodies, these marks are indelible; they are neither extinguished, nor rendered fainter by lapse of time, and can be got rid of only by excision.

Another mode of ornamenting the skin by means of raised cicatrices is principally practised in Africa. Winterbottom informs us, that in the neighbourhood of Sierra Leone it is peculiar to the female sex; "that it is used upon the back, breast, abdomen, and arms, forming a variety of figures upon the skin, which appears as if embossed. The figures intended to be represented are first drawn upon the skin with a piece of stick dipped in wood-ashes, after which the line is divided by a sharp-pointed knife. The wound is then healed as quickly as possible, by washing it with an infusion of bullanta. These incisions or marks are generally made during childhood, and are very common on the Gold Coast, where each nation has its peculiar mode of ornamenting themselves, so that by the disposition of the marks it is easy to know what country the person belongs to: for the most part, the females possess the greatest number of these painful ornaments."

In the recent voyage up to the Congo, the embossed cicatrices were found a very common ornament. Captain Tuckey observed, on entering the river, "that all

the visitors, whether Christians or idolaters, had figures raised on their skins in cicatrices." As he proceeded further, he found that "the cicatrices or ornamental marks on the bodies of both men and women were much more raised than in the lower part of the river. The women in particular had their chest and belly below the navel embossed in a manner that must have caused them infinite pain."

The septum narium is sometimes perforated, and a piece of bone or wood worn in the aperture, often of considerable magnitude. But the most singular practice is that of the women on the north-west coast of America, who make a large horizontal slit in the lower lip, parallel to the opening of the lips, and penetrating into the mouth; they wear in it ornaments of different kinds, but generally oval pieces of wood a little concave on the two surfaces, and grooved at the edge. The smallest of these additional mouths, as described by Vancouver, was $2\frac{1}{2}$ inches long; the largest $3\frac{4}{10}$ inches by $1\frac{1}{2}$. Capt. Dixon brought home one of the lip ornaments, that measured $3\frac{7}{8}$ inches by $2\frac{5}{8}$. It was inlaid with a small pearly shell, and surrounded with a rim of copper.

The natives of the neighbouring Fox Islands seem determined to unite all kinds of personal embellishment. "They make three incisions in the under lip; they place in the middle one a flat bone or a small coloured stone; and in each of the side ones a long pointed piece of bone, which bends and reaches almost to the ears. They likewise make a hole through the gristle of the nose, into which they put a small piece of bone in such a manner as to keep the nostrils extended. They also pierce holes in the ears, and wear in them what little ornaments they can procure."

The barbarous Chinese custom of contracting the feet of women, and the great extent to which their irrational purpose is accomplished, are well known. While the Europeans were expressing their surprise at such an absurdity, and pitying the sufferers, they were constantly permitting under their own eyes the equally, if not more, pernicious practice of tight stays; by which the figure of the thorax is completely and permanently altered at its lower part.

When the male New-Hollanders approach the age of puberty, they have one of the front incisors of the upper jaw knocked out, with a curious set of ceremonies described and delineated by Mr. Collins. The women of these people, and of some others, particularly in the South Sea, are often seen to have lost one or two joints of the little finger. The exact nature and object of both these mutilations are not understood.

A VOCABULARY OF CHEMICAL TERMS.

Absorption.—If muriatic acid gas be thrown into water, the water becomes acidulous, and an absorption of the gas is said to have taken place. When a gas loses its gaseous properties by combination, it is said to be absorbed; but this term is not employed when we speak only of the condensation of a gas, by cold or pressure.

Accension.—A term employed by the old chemists to denote sudden inflammation or conflagration, by the mixture of two or more substances.

Acetates.—Salts formed by the combination of any base with the acetic acid.

Acidifiable.—Capable of forming an acid. Thus sulphur is said to be an acidifiable base.

Acids.—Substances which produce that sensation on the tongue which we call sour; but some substances are classed with the acids which have not this characteristic, though they possess some of the other properties of acids.

Acidules.—A term applied to the natural combination of some acids with a portion of potash. The oxalic acid and the tartaric are the only acids that have hitherto been found in this state of semi-saturation.

Adapter.—A chemical utensil fixed between a retort and its receiver. Thus a tube fixed at the neck of a retort for the purpose of lengthening it, is called an adapter, and sometimes an adopter. A vessel having two necks when used for a similar purpose bears the same name.

Aëriform fluids.—Fluid substances combined with an additional portion of caloric sufficient to give them the gaseous form.

Affinity, chemical.—A term used to express that peculiar propensity which different species of matter have to unite with each other, or with portions of matter of their own species.

Affinity of aggregation.—A force by which two bodies of the same kind tend to combine, and by which an aggregate is formed without the chemical properties of the substances being at all changed.

Affinity of composition.—A force by which substances of different kinds unite, and by which matter is formed whose properties are different from those of the bodies before their combination. This attraction is stronger in proportion as the nature of the bodies is different between which it is exerted.

Agent.—Any substance which has the property of producing chemical action is called a chemical agent.

Aggregates.—Substances whose parts are united by cohesive and not by chemical attraction.

Albumen.—The modern name for coagulable lymph. It is that peculiar animal substance which forms the serum of the blood, the white of eggs, and other compounds.

Alcohol.—Rectified spirit of wine. When good, its specific gravity is only 0.836.

Alembic.—The term formerly given to several stills used by chemists for their distillations.

Alkalies.—Peculiar substances which have a burning and caustic taste, and a strong tendency to combination. When united with acids they form mild alkaline salts.

Alloys.—A combination of any two metals, except mercury, is called an alloy. Thus gold is alloyed either with silver or copper, for the purpose of coinage.

Alluvial.—By alluvial depositions is meant the soil which has been formed by the destruction of the mountains, and the washing down of their particles by torrents of water.

Alumium.—The pure base of alumina.

Amalgam.—A combination or mixture of mercury with any other metal, is called an amalgam.

Ammoniacal salts.—Salts formed by the union of an acid with ammonia or volatile alkali.

Analysis.—The resolution of a substance into its constituent parts, for the purpose of examination.

Annealing.—The art of rendering substances tough which are naturally hard and brittle. Glass and iron are annealed by gradual cooling; brass and copper, by heating and then suddenly plunging them in cold water.

Apparatus, chemical.—This term is descriptive of all the utensils made use of in a chemical laboratory. The principal are stills, furnaces, crucibles, retorts, receivers, matrasses, worm-tubs, pneumatic troughs, thermometers, &c.

Arcanum duplicatum.—An old name of the salt which is now called sulphate of potash.

Areometer.—A graduated glass instrument with a bulb, by which the specific gravity of liquids is ascertained. Baumé's areometer is that which is chiefly referred to when the French writers speak of this instrument.

Argil.—The name employed by the old chemical writers to denote alumina, or common clay.

Argillaceous.—A term descriptive of those earths which contain alumina or clay.

Aroma.—A term used for the odour which arises from certain vegetables, or their infusions.

Arseniates.—Salts formed by the combinations of any base with the arsenic acid.

Atmometer.—An instrument contrived by Professor Leslie for measuring the quantity of exhalation from a humid surface in a given time.

Atmospheres.—This term is used to express a degree of additional pressure given to fluids. Thus, if, in order to impregnate water with any of the gases, a pressure of 15lbs. is produced upon every square inch of surface, one atmosphere is said to be given to the inch; if 30lbs., two atmospheres, &c.

Attraction.—Chemical attraction is a term synonymous with affinity.

Azote.—A name given by the French chemists to nitrogen.

Balloon.—A term given by the French to their spherical chemical receivers.

Balsams.—Certain aromatic resinous

substances, which are obtained from some trees by incisions. Of this kind are the Canada balsam, the balsam of Copaiva, the balsam of Tolu, &c.

Barium.—The base of the earth called barytes.

Barometer.—An instrument which shows the variation of the pressure of the atmosphere, by the rise or fall of a column of mercury in a glass tube attached to a graduated plate.

Base.—A chemical term, usually applied to denote the earth, the alkali, or the metal which is combined with an acid to form a salt.

Baths.—Vessels for distillations or digestion, contrived to transmit heat gradually and regularly.

Baths, sand.—Vessels filled in part with dry sand, in which those retorts are placed which require a greater heat than can be given by boiling water. In large works, iron plates are used instead of vessels of capacity. They are often called sand-heats.

Baths, water.—Vessels of boiling water, in which other vessels containing the matters to be distilled or digested are placed, in order that the same heat may be kept up throughout the whole of any particular process.

Benzoates.—Salts formed by the combination of any base with the benzoic acid.

Bittern.—The mother liquor which remains after the crystallisation of muriate of soda (sea salt). It generally contains sulphate of magnesia and a small portion of sulphate of soda.

Bitumen.—A generic term applied to a variety of fossil inflammable substances.

Blow-pipe.—An instrument to increase and direct the flame of a lamp for the analysis of minerals, and for other chemical purposes.

(To be continued.)

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COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 33.

ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

The latter operation is only effected under the stimulus of sun-light; the former is constantly going on, by day and night, in sunshine and shade, and if it be impeded or prevented by want of a due supply of oxygen, the plant speedily becomes unhealty. Now this extrication of the products of internal decay is termed *excretion*. It is usually confined, in plants, to the formation of carbonic acid and water, by the union of the particles of their tissues with the oxygen of the air—a process identical with that which occurs after the death of the entire structure; but in animals it is much more complicated, owing to the larger number of constituents in their fabric, and to the much greater variety in the proportions in which these are combined: hence the products of internal decay or decomposition are much more numerous and varied, and several distinct modes are devised for getting rid of them. Moreover, as the animal tissues are much further removed than the vegetable from the composition of inorganic bodies, they are subject to much more rapid and constant decay, and we find that this decay is so considerable in amount as to require on the one hand a very complex excretory apparatus to carry off the separated matter, and on the other a large supply of nutrient material to replace it.

The preceding history may be thus summed up:—First. The vegetable cell-germ draws to itself and combines together certain inorganic elements, and thereby produces a new and peculiar compound, as the *pabulum* for its further development. This compound, however, exhibits no properties that distinguish it from others in which ordinary chemical agencies have been concerned, and we may, therefore, regard the first act of the cell-germ as of a purely chemical nature. Secondly. The cell-germ then exerts an agency upon the *pabulum* thus prepared, by which a new arrangement of its particles is produced. This new arrangement is proved by the new and peculiar qualities of the fluid, which show that it is something more than a mere chemical compound, and that it is in the act of undergoing the process of organisation. Thirdly. The organisation of this elaborated pabulum then takes place; its materials are withdrawn from the fluid, and incorporated with the solid texture; and in thus becoming a part of the organised fabric, they are caused to exhibit its own peculiar properties. Fourthly. At the same time, another portion of this pabulum is gradually prepared to serve as the germ of a new cell, or set of cells, by which the same properties are to be exhibited in another generation. Fifthly. By a chemical operation, resembling that concerned in the first preparation of the pabulum, a certain secretion more or less differing from it in character, but not destined to undergo organisation, is formed in the cavity of the cell. Sixthly. A decomposition of the organised structure is continually going on, by the separation of its elements into simpler forms, under the

influence of purely chemical agencies; and the setting free of the products by an act of excretion, is thus incessantly restoring to the inorganic world a portion of the elements that have been withdrawn from it. Seventhly. When the term of life of the parent cell has expired and its reproductive atoms are prepared to continue the race, the actions of nutrition cease; those of decomposition go on unchecked; and the death of the structure, or the loss of its distinguishing properties, is the result. By the decomposition which then takes place with increased rapidity its elements are restored to the inorganic world, presenting the very same properties as they did when first withdrawn from it; and becoming capable of being again employed, by any number of successive generations of living beings, to go through the same series of operations.

The germ, however, can in no wise appropriate the materials of its growth, nor develop itself into a cell, unless it be brought under the influence of certain physical agents. The first production of the pabulum out of water, carbonic acid and ammonia, requires the agency of light. This operation, however, is limited to the vegetable kingdom, and is probably rather of a *chemical* than of a vital nature (as before observed). The following experiment of Schleiden's confirms this view. Having allowed some grains of oats to germinate in darkness until the buds were four inches long, he cut them down, washed them and dried them between blotting paper and then placed them on white paper, to be dried in the sun. They were previously of a pale yellow colour; but after six hours' exposure to the sun's rays, during which, the plants were almost perfectly dried, they had all become of a perfectly green colour. It can scarcely be supposed that any peculiar *vital* agency was concerned in the transformation, under such circumstances; but that a certain amount of HEAT is necessary to all vital activity, is an universal fact; as is also the fact that the amount of activity increases with the temperature, until this reaches an elevation which becomes injurious, either by overstimulating the vital properties of the tissues, or by effecting some physical change; but it is necessary here to state them, in order that the relation which we shall presently attempt to demonstrate between vital and physical phenomena, may be comprehended.

Editorial Observation.—How beautifully does this great physiological fact prove the soundness of Dr. COFFIN'S assertion, and the correctness of his system, that heat is life, cold its extinction, or, in other words, without *heat* there would be no life, and without an equilibrium of heat in the animal economy there would be no health. Even the promulgation of these great truths alone, independently of the immense good he has otherwise done, stamps him preeminently a benefactor to mankind; and had he done no more than this, his name ought to be handed down to posterity as an enlightener of his fellow men.

The solitary cell which constitutes the entire organism of the humblest of living beings, is also the simplest organic element of the most elaborate and complicated fabrics. We shall hereafter see that all the vegetable tissues originate from similar cells, and that all the truly *vital* operations are performed, even in the fully developed plant or tree, by tissues retaining their primitive cellular character; and notwithstanding that, at first sight, the animal fabric appears to have very little in common with that of the plant, we shall find that even in it, the same general facts are demonstrable, both as to the origin of all the tissues in cells and as to the instrumentality of cells in the performance of all the truly vital actions of the organism. Hence we are justified in affirming, that, as the simple cell presents us with the type of organised structure, so our idea of what is essential to *life* should be founded upon those vital phenomena which every cell exhibits in the course of its history as an individual, and upon the distinctive attributes which we must consequently regard it as possessing. Putting aside then such portions of its series of actions as we appear justified in referring to chemical agencies, we find that the incorporation of the *pabulum* into the substance of the cell itself,which is taking place not only during its first development, but throughout its whole period of vital activity, must be considered as its most important

manifestation of life; on this, all subsequent phenomena are dependent; and whatever may be the endowments which the cell is to possess in its perfect state, they are inseparably connected with this process of organisation.

(To be continued.)

THE RECENT PERSECUTIONS OF BOTANIC PRACTITIONERS.

To the Editor of the Botanical Journal.

Sir,—I was very much pleased to read the report of the meeting recently held at Bedford, and consider great credit is due to Dr. Coffin for so nobly defending the botanic system and the persecuted agent in that town. If such meetings were held in every case of that kind, we should not hear of so many disgraceful and malicious attempts to ruin botanic practitioners. I was also pleased to find that our old friend, Mr. John Stephens, was there to render his assistance.

In reference to these prosecutions, I would ask, if that is the way to make the medical profession respectable, for its members to become the persecutors of any class of practitioners whom they pretend to look upon with marked contempt. These persecutions will exasperate a multitude of people against their profession, and increase the patrons of our system a hundred-fold. They have been very numerous in different parts of the country, and in every instance it has been apparent, to the disinterested observer, that they have been the offspring of the malice of the faculty; and in every case they have been subjected to the mortification of a disgraceful defeat. It is not surprising, that there are to be found in their ranks men whose jealousies are excited by the rapid spread of a rival system, and more especially of a system which, in their cool, reflecting moments, they are fully convinced will, ere many years elapse, totally eclipse the one with which they are identified. If they ardently desire the destruction of our system, it is a matter of astonishment to me, that they are not more choice of the means for doing it. There is not a botanic practitioner in the country who is not situated in the immediate vicinity of some of the legalised doctors. Let them exercise the utmost vigilance over their practice, and report faithfully to the public the effects produced by our remedial agents, taking care to enumerate the cures as well as the failures, and their object will soon be accomplished. The people will not long employ a class of practitioners that fail in curing their patients. There is more truth than poetry in the words of the devil, when he was longing to lay his hand on the patriarch of Uz, "skin for skin, yea, all that a man hath will he give for his life." The credulous will sometimes be duped by the boastful pretentions of some arrant quack; but the people generally do not entrust their lives in the hands of physicians, who have no public notoriety, except as murderers. They have been looking on for many years, and have been watching, with deep interest, the progress of Medical Botany; they have investigated, tried and adopted it. Why have thousands of the people of England abandoned the old system, and adopted the new one? Why did so many petition Parliament against the Medical Monopoly Bill, praying that no laws should be passed to interfere with the botanic practice? Is it not because they consider our system the safest? In times of pestilence, cholera and fever, we do not see the sick and afflicted fleeing from healthy localities, to breathe the poisonous and deadly air in those unhealthy districts, for recovery during the raging of the same; and it is absurd to suppose that the community would abandon one class of remedial agents for another far less beneficial. Arguments are far better weapons for our destruction than prosecutions. Hundreds have been induced to investigate our system in consequence of them, and have been convinced of its simplicity and efficacy. The steam-boat on the Thames, or plying on any other river, that was constantly bursting its boiler, and destroying life, would not be long patronised. The people are deciding upon the comparative merits of the botanic and allopathic boats, and are rapidly quitting the old line, and neither hard nor soft words will prevent them from taking the safest boat. We respectfully invite the Bedford and Shrewsbury physicians who took part in the

late persecution, and other of the same class, to make a trip in ours, examine its machinery, appoint a committee to keep a strict and just account of the number of deaths caused or accelerated by it, and report, if they can prove that it is less safe than those that have been plying on the route for the last thousand years. I am sure its captain, Dr. COFFIN, will order it off the line.—Yours, &c.,

MEDICAL BOTANIST.

Nottingham, 25th April, 1859.

ON THE PSEUDO-SCIENCES.

(Continued from page 179.)

THUS the source of error is not confined to the pseudo-sciences, but certainly is most richly developed in them, as might be expected; and in real sciences is found, as before hinted, in those principally which, from partial development, have fewest absolute facts. A balloon ascends —a stone falls; and if we ask any half-scientific man the cause of these apparently diverse phenomena, he considers he has acquitted himself as a scholar, if not something more, when he answers flippantly, with a supercilious pitying of your ignorance, "gravitation." We are, however, not satisfied, although we believe in gravitation; and while we leave this scholar to tell us *what* gravitation is, and how much there is of the substitution of a name for things in his use of the term, we will go on to the next head, viz.:

3. *Errors arising from the substitution of assertions for facts.*—We all ought to look suspiciously at any statement backed only by "they say so;" and yet many will readily believe anything which appears in print. "It must be true," as is a common expression, "because I read it in a newspaper, or in a book," forgetting what Burns has sung, "Some books are lies frae end to end;" and if we might pay attention to the *traditional* pseudo-sciences, we might continue—"and some great lies were never penned." Now we have before us a book of the class referred to, "Table-moving, by a Physician"—a most appropriate name; effect and cause neatly combined! for, when the table did move, it was most likely by the assistance of the physician. But Professor Faraday's experiments and writings on the subject so thoroughly settled the question that we need do no more than refer our readers for further information to the *Athenæum* for Saturday, July 2nd, 1853, page 801. Our next subject in order is—

4. *Errors arising from illogical reasoning from correct data.*—This is not so common as many other sources of error, and frequently proceeds from carelessness rather than from incapacity; we might almost say, invariably so, if the data or premises of the argument have been discovered or observed by the reasoner for himself; for correct observation involves so many exact and careful qualities of mind, and so much common sense, with at the same time no little mental calibre, that any one having once exercised these qualities on any particular point, would almost necessarily have power enough to conduct a process of correct inference towards a judgment or conclusion thereon; for observation, let it be remembered, is not merely looking at a thing. "The tables move," says a learned author. "I have many times seen them. *I* know there is no wish to deceive on the the part of the manipulators; moreover, the moment you take your hands away, the movement ceases. *Therefore* (the italics are our own), it *must* be from some magnetic influence exerted by the manipulators upon the table." Therefore? there is no therefore in the case, it is no more a consequence of any expressed premise in this argument than if the conclusion referred to the price of corn in the year 1828, or the probable orbit of the next comet to be discovered. A table moves; you see it; you are convinced that no intentional deception is practised or attempted; the movement ceases when the hands are removed; *these are your expressed premises*, and so far all is correct. Now, according to experience and ordinary observation, the most legitimate conclusion is, that the hands as physically moved the table as if they had intended to do so; and further, according to experience and ordinary observation on magnetic and similar influences, imposition of the magnetising body is not required to produce the so-called similar effects, but simply its proximity or nearness; and further the so-called similar effects are not similar, but different; and

in short, there is nothing but dissimilarity throughout any exact comparison of these phenomena; and table-movings would be as likely to remind any one who was really acquainted with magnetic influences of those influences, as they would of the revolution of our earth or Belshazzar's feast, or anything else not connected with the subject.

5. *Errors arising from illogical reasoning from incorrect data.*—Illogisms of this kind are necessarily most fraught with error: they are so apart from truth, that we verily believe it is the boldness with which they are uttered and promulgated only, which demands for them any credence—wrong in foundation, wrong in process, wrong in result. We will take an example from that *admirable work* of Professor Simpson, on Homœopathy, its tenets and tendencies, theoretical, theological and therapeutical (third edition). It would seem as if Dr. Simpson had taken for his motto, "Out of thine own mouth will I judge thee;" for such a collection of contradictory assertions, such a mass of confused and trifling reasoning, such an absence of all legitimate conclusions from the data reasoned upon, were never, perhaps, presented to the public, except in the writings in which these select specimens were originally presented to the world. The book consists of twenty-one chapters and an appendix, and will repay any one's perusal even as a source of amusement.

(To be continued.)

A VOCABULARY OF CHEMICAL TERMS.

(Continued from page 192.)

Bolt-head.—A round chemical vessel with a long neck, usually employed for digestions. It is also called a matrass.

Borates.—Salts formed by the combination of any base with the acid of borax.

Boron.—The undecomposable base of boracic acid.

Button.—A name given to the small round piece of metal which is found at the bottom of a crucible after a metallic ore or an oxide of metal has been reduced.

Calcareous.—A chemical term formerly applied to describe chalk, marble and all other combinations of lime with carbonic acid.

Calcination.—The application of heat to saline, metallic or other substances, so regulated as to deprive them of moisture, &c., and yet preserve them in a pulverulent form.

Calcium.—The undecomposable base of the earth known by the name of lime.

Caloric.—The chemical term for the matter of heat.

Caloric, free.—Caloric is so called when in a separate state or attached to other substances when not chemically united with them.

Caloric, latent.—The term made use of to express that portion of caloric which is chemically united to any substance, so as to become a part of the said substance.

Calorimeter.—An instrument for ascertaining the quantity of caloric disengaged from any substance that may be the object of experiment.

Calx.—An old term made use of to describe metallic oxide.

Camphorates.—Salts formed by the combination of any base with the camphoric acid.

Capillary.—A term usually applied to the rise of the sap in vegetables, or the rise of any fluid in very small tubes, owing to a peculiar kind of attraction, called capillary attraction.

Capsules.—Small saucers of clay for roasting samples of ores, and for smelting them to ascertain their value.

Caput-mortuum.—A term signifying dead-head, being that which remains in a retort after distillation to dryness.

Carbon.—The basis of charcoal.

Carbonates.—Salts formed by the combination of any base with carbonic acid.

Carburets.—Compound substances, of which carbon forms one of the constituent parts. Thus plumbago, which is composed of carbon and iron, is called carburet of iron.

Causticity.—That quality in certain substances by which they burn or corrode animal bodies to which they are applied.

Cementation.—A process by which metals are purified or changed in their qualities by heat, without fusion, by means of a composition called a cement, with which they are covered. Thus iron, by

being kept a long time in a certain degree of heat, surrounded by charcoal powder, is converted into steel.

Chalybeate.—A term descriptive of those mineral waters which are impregnated with iron.

Charcoal.—Wood burnt in close vessels. It is an oxide of carbon, and generally contains a small portion of salts and earth. Its carbonaceous matter may be converted by combustion into carbonic acid gas.

Chatoyant.—A term much used lately by the French chemists to describe a property in some metallic and other substances of varying their colours according to the way in which they are held; as is the case with the feathers of some birds, which appear very different when seen in different positions.

Chert.—A term made use of in describing a species of siliceous stones, which are coarser and softer than common flint. It is often found in large masses in quarries of limestone.

Chlorides.—Compound bodies formed by the chemical union of any substance with chlorine.

Chlorine.—A name lately given to the substance usually called oxymuriatic acid.

Chromates.—Salts formed by the combination of any base with the chromic acid.

Citrates.—Salts formed by the combination of any base with the citric acid.

Coal.—A term applied to the residuum of any dry distillation of animal or vegetable matters.

Cohesion.—A force inherent in all the particles of all substances, excepting light and caloric, which prevents bodies from falling in pieces.

Cohobation.—When a distilled fluid is poured again upon the matter from which it was distilled, in order to make it stronger, it is called cohobation. It is not much practised by modern chemists.

Columbates.—Salts formed by the combination of any base with the columbic acid.

Combination.—A term expressive of a true chemical union of two or more substances; in opposition to mere mechanical mixture.

Combustibles.—Certain substances capable of combining more or less rapidly with oxygen.

Combustion.—The act of absorption of oxygen by combustible bodies from atmospheric or vital air.

Comminution.—The reduction of hard bodies into small particles. By this process the heaviest substances may be made to float in the lightest fluids.

Concentration.—The act of increasing the specific gravity of bodies. The term is usually applied to fluids which are rendered stronger by evaporating a portion of the water which they contain.

Condensation.—The act of bringing the component parts of vapour, or gas, nearer together by pressure, or by cold. Thus atmospheric air may be condensed by pressure, and aqueous vapour by the subtraction of caloric, till it is converted into water.

Crucibles.—Vessels of indispensable use in chemistry in the various operations of fusion by heat. They are made of baked earth, or metal, in the form of an inverted cone.

Crystallisation.—An operation of nature in which various earths, salts, and metallic substances, pass from a fluid to a solid state, assuming certain determinate geometrical figures.

Crystallisation, *water of*.—That portion which is combined with salts in the act of crystallising, and becomes a component part of the said saline substances.

Cupel.—A vessel made of calcined bones, mixed with a small proportion of clay and water. It is used whenever gold and silver are refined by melting them with lead. The process is called cupellation.

Decombustion.—Synonymous with deoxidisement; which see.

Decomposition.—The separation of the constituent principles of compound bodies by chemical means.

Decrepitation.—The sudden decomposition of salts attended with a crackling noise when thrown into a red-hot crucible, or on an open fire.

(To be continued.)

To be modest, retiring, and gentle in manner, is perfectly compatible with the most entire self-possession, and with the most active fortitude.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

THE MECHANISM OF THE HEART.

THE heart is placed nearly in the centre of the human body, and is itself the centre of the circulating system. The system of vessels which it excites and moves consists of arteries and of veins: the arteries act with great strength, with a pulsation like that of the heart itself, and convey the blood over all the body; the veins are in greater number, exceedingly large, pellucid almost in their coats, incapable of that energetic action with which all the functions of the arteries are performed; they return the blood to the heart with a slow, equable, and gentle motion, and deposit at the right side a quantity of blood equal to that which is at each pulsation driven out from the left. The heart is placed betwixt the arteries and the veins to regulate and enforce their action; to receive the blood from the veins by a slow dilatation, and to restore, by a sudden contraction, that force which the blood loses in passing round the circle of the body. But the heart has also another and more important office to perform: for, by having four great cavities and two orders of arteries, it performs in the same instant two circulations, one for the lungs and one for the body; it receives from the lungs nothing but pure blood, it delivers out to the body nothing but what is fit for its uses: and this purifying of the blood, and this excitement of the arteries, are two chief points of modern physiology.

It will be most easy to conceive at first the idea of a more simple heart, of one circle of actions, of one simple circulation, of one bag for receiving, and another joined to it for propelling, the blood. Indeed, a heart consists merely of these essential parts—a great vein, an auricle, a ventricle, and a great artery; of a vein which returns the blood from all the body; of an auricle or smaller bag, which receives that blood and retains it till the action of the heart is relaxed; of a ventricle (which is the proper heart), strong, muscular, very irritable, and easily excited, into which the auricle pours its blood; of an artery which is allied to the ventricle in strength and action (as the auricle is to the vein in the delicacy of its coats), and which carries on the blood to the extremities of the body; and the vein and artery meeting at their extremities in the body, and uniting, the whole is a circle, and the heart is the central power.

If an animal were not to breathe, its system might be exactly what is now described; it would have but one vein, one auricle, one ventricle, one artery; it would have one simple heart: but with us, and other breathing animals, it is not so; and I am now to describe a more complex and curious circulation. For suppose this blood, so essential to our existence, to have in it some principle of life, which is continually lost, or in its passage through the body to be impregnated with something which should be thrown off, that principle must be continually renewed, or an opportunity given

to send off what is offensive to life: the heart which fills the arterial system must not be taken from its appointed office nor disturbed; nature appoints a second heart, which belongs entirely to this most important of all functions, viz., renewing the blood—and it may be renewed in many various ways. It might, for example, circulate in some peculiar viscus; in the fœtus it does circulate in such a mass, for the placenta is a thick and flat cake, whose office we know to be equivalent to that of the lungs, but whose structure we imperfectly comprehend: in the chick we see its blood circulating over the yolk (for the yolk is inclosed within the membranes of the unhatched chick), and we perceive the blood redder as it returns to the heart, and plainly changed: in fish we find the blood circulated over the gills, exposed thoroughly to the water in which they swim, and thus the gills perform to them the function of lungs. But in all breathing creatures the lungs do this office; the lungs are, next to the heart itself, essential to life; in those who die from bleeding we can perceive, from the livor of the face, from the sobbing and struggles of the chest, from the regular, convulsive sighs of those creatures which are butchered, rather a desire for air than a want of blood. It is for the purpose of this second circulation that nature has appointed in all the warm-blooded animals two hearts, a heart for the lungs and a heart for the body.

There are other varieties which distinguish animals into creatures of cold or of warm blood; for there are certain constitutions which do not require that the blood should be thus continually renewed. It is not because animals are amphibious, or go into the water, that they have peculiar lungs; for the land tortoise, the newt, the cameleon, never go into the water; yet they have membranous lungs: nor indeed can the amphibiæ, as the seal, the porpoise, the sea-lion, &c., dive and exist under water more than a man can do, though for whole days they lie in herds basking upon the shore: it is their peculiar constitution to need less than other creatures the office of the lungs. The cold-blooded animals are generally creeping animals, sluggish, languid, cold, inert, difficultly moved, and tenacious of life to a wonderful degree. They can bear all kinds of stimuli; they can bear to have their heads, legs, bowels, cut away; and among other peculiarities of this constitution, they can live long without air: they will rise from time to time above water, if you allow them; they can bear again to be kept under water, if you force them: but if they can live long under water, they can also live at least as long after you have cut off their heads, or cut out their hearts. By all which it is clear that they cannot live without breathing; that this function is necessary to their existence: but that they are tenacious of life.

Of those cold-blooded creatures always either the heart or the arteries are peculiar; the heart is so in many amphibiæ, as in the turtle, where the heart seems to consist of three ventricles, but with partitions so imperfect betwixt them that they are absolutely as one: this one ventricle gives out both the great arteries; the blood of the lungs and the blood of the body are both mixed in the heart: and since there are two arteries conveying this mixed blood, if the two arteries be nearly equal in size, then it is just one half of the blood thrown out by the heart at each stroke that receives the benefit of the lungs. In many others, as the frog, the newt, the toad, the peculiarity is in the arteries alone; they have one single and beautiful heart; there is one large auricle as a reservoir for all the blood both of the body and of the lungs; there is one neat, small, and very powerful ventricle placed below the reservoir, having strength quite sufficient for moving both the blood of the lungs and the blood of the body; and this ventricle gives off an aorta, which soon divides into two branches, one for the body, and one for the lungs; and these of course have but half the blood of this heart exposed to the air: these also are cold-blooded animals.

But all breathing creatures, such as are called animals of hot blood, have two hearts, or rather one heart in two distinct parts; the one heart is sending blood through the lungs, while the other heart is pushing its blood over the body; not the half only, but the whole blood which is sent by each stroke of the heart over

the body must have first passed through the lungs; no blood can reach the heart for the body which has not been sent to it through the lungs, or, in other words, the veins of the lungs; and they alone feed the left side of the heart.

ON THE REMEDIAL AGENTS OF THE SCHOOLS.

We could not help being particularly struck by the admissions made by, and contained in, Mr. Miller's "Principles of Surgery" (an admirable work, written by a very clever and experienced surgeon), wherein he states the following, in his article upon the benefits resulting from the employment of chloroform in dislocations. It is, indeed, so rich and so much to the point in favour of that part of our glorious system which expels all poisons and depletory treatment from our practice, that no apology, we are convinced, is needed for its insertion in our columns. "A friend of mine (Mr. Miller) used to say that he liked travelling in a steam-boat very much, because in the night they made such progress; during every minute of his sleep the paddles were busy, the ship moving on and on, and, awaking in the morning, it was a great satisfaction to find oneself perhaps a hundred miles nearer your journey's end, or even snugly moored in port. It must then (says Mr. Miller) be a still greater comfort to the victim of a dislocation, to sleep unconsciously all the while that his limb is handled, pulled at and reduced, and, on awaking, to find that the object of his most anxious desire —the means towards the attainment of which caused him no little dread—has been thoroughly secured. The awaking, or rather the knowledge obtained on awaking, is in both cases delightful, in neither case is the sleeper the worse for his sleep; and in this latter respect it is, that the inhaler of chloroform enjoys a *great* advantage over him who has been subjected to any other auxiliary." Now, readers, mark the admission of the poisoning, deleterious qualities of the drugs and treatment practised by the allopathists. From tobacco he is helped up *sick unto death;* from *bleeding* he rises recovered from his faint, but *a worse man* than when he lay down, valuable fluid spent from his veins, which he has no sure prospect of ever fully replacing; from *opium* he staggers up confused, and giddy, and headachy, and, perhaps, with the sure seeds in him of a week's indigestion; from *antimony* he is assisted to bed or couch, still sick with vomiting, with a certain conviction that the drug has given him a shake that will last for twenty-four hours; from the warm bath he has to be aided, for he is weak in every limb, incapable of any considerable exertion, and well satisfied for once of the possibility of having too much of a good thing.

Having so often adverted to the poisoning system of the regular practitioners, it is needless to amplify upon this point. Quite sufficient is the above admission to prove, that even the cleverest of the faculty cannot shut their eyes, or prevent themselves from acknowledging, the gross, deadly errors of their system.

EXPERIMENTS IN CHEMISTRY.

(Continued from page 168.)

If two parts of sulphate of copper, and three of carbonate of ammonia (the one a blue, the other a white salt) be rubbed together in a glass mortar till the carbonic acid be expelled, the mass will become soft and humid, and, when dried, forms a crystalline powder of a most beautiful deep violet colour. This compound was formerly called cuprum ammoniacum.

If a little colourless and recently prepared muriate of tin be poured into a rich green solution of muriate of copper, the copper will be deprived of a portion of its oxygen, and a white muriate of copper precipitated.

Into the phial containing the white muriate of the last experiment, pour a little muriatic acid. The precipitate will quickly be dissolved, and the solution will be colourless.

Procure some solution of sulphate of iron at the minimum of oxidisement, by digesting iron filings with the common sulphate. Into this, when filtered, drop a little of the solution of prussiate of potash, and a white prussiate of iron will be precipitated.

If a very little colourless nitric acid be added to a solution of sulphate of iron, prepared as in the last experiment, the

addition of the prussiate of potash will produce not the white, but the blue prussiate of iron.

Pour some pure nitric acid on the black oxide of manganese, and no solution will be effected; but if a little sugar be added, the sugar will abstract a part of the oxygen from the nitric acid, and then the acid will be enabled to dissolve the metal.

Expose an ounce of nitric acid for an hour, in an open phial, to the direct rays of the sun, and pour another ounce of the same acid, that has not been so exposed, into another phial. If a little of the black oxide of manganese be now put into each, the oxide in the first phial will be dissolved, while that in the other will not be affected by the acid.

If a piece of bright silver be dipped in a solution of sulphate of copper, it will come out unchanged; but if the blade of a clean penknife, or any piece of polished iron be dipped in the same solution, the iron will instantly put on the appearance of copper.

Take the piece of silver employed in the last experiment, hold it in contact with the iron, and then, in this situation, dip them into the same solution, and both will be covered with copper.

Dissolve some oxide of nickel in caustic ammonia, which will produce a solution of a rich blue colour. By exposure to the air this gradually changes to a purple, and lastly to a violet. The addition of an acid will, however, convert the whole to a green.

Take the green solution of the last experiment and pour caustic ammonia upon it. The original blue colour will now be reproduced.

Prepare a colourless solution of tartrate of potash and antimony (the common emetic tartar) and pour into it a little liquid sulphuretted hydrogen. This will combine with the metallic oxide and form an orange-coloured precipitate.

Melt together equal parts of copper and antimony, the one a yellow, the other a white metal, and the alloy that results from this mixture will take the colour of the violet.

If the gray sulphuretted oxide of antimony be fused in a crucible, we procure a beautiful transparent glass, which is called the glass of antimony. This takes the colour of the hyacinth.

Dissolve dry nitrate of silver in pure water; add a little oil of turpentine, shake the mixture and cork it close. Submit the phial with its contents to the heat of boiling water for an hour, when the metal will be revived and the inside of the phial, where the oil reposed on the aqueous solution, will be beautifully silvered, the revived metal forming a metallic ring, extending quite round the phial.

Immerse a slip of white silk in a solution of nitro-muriate of gold in distilled water, and dry it in the air. Silk thus prepared will not be altered by hydrogen gas: but if another piece of silk be dipped in the solution and exposed while wet to the same current of hydrogen gas, instant signs of metallic reduction will appear; the colour will change from yellow to green, and a brilliant film of reduced gold will soon glitter on its surface.

If a piece of silk be immersed in a solution of nitrate of silver and dried in a dark place and then submitted to hydrogen gas, the silver will not be reduced; but if exposed while wet to a stream of the same gas, the surface will quickly be coated with reduced silver; various colours, such as blue, purple, red, orange and yellow, will accompany the reduction, and the threads of the silk will look like silver wire. During these experiments the silk should be constantly kept wet with distilled water.

Dissolve some crystals of muriate of tin in distilled water, then dip a piece of white silk in the solution and dry it in the air. If this be now immersed in hydrogen gas, no change will be observed; but if it be exposed while wet to the same current of gas, the reduction will soon commence, attended with a great variety of beautiful colours, as red, yellow, orange, green and blue, variously intermixed.

Prepare a strong solution of phosphorus in sulphuric ether, and dip a piece of white silk in the solution; then, when the ether has evaporated, and the phosphorus begins to fume, apply a solution of nitro-muriate of gold, made by dissolving the crystals of that salt in distilled water; the silk will in an instant be

covered with a splendid coat of metallic gold.

Proceed as in the last experiment, and instead of the solution of gold, apply, with a camel's hair pencil, a solution of nitrate of silver. Here the silver will instantly be restored to its metallic brilliancy and frequently attended by spangles of a beautiful blue.

If a bit of white silk be immersed in an ethereal solution of gold and dried, the application of phosphorised ether will only impart a brown colour to the silk; but if, as soon as the phosphorus begins to fume, it be placed on the palm of the hand and breathed on for a considerable time, the brown will be succeeded by a purple tinge, and the metallic lustre of the gold will soon begin to appear.

"An aqueous solution of nitro-muriate of gold," says Mrs. Fulhame, "was poured into a china cup containing some phosphorised ether; instantly the gold began to assume its metallic splendour, attended with a variety of colours, as purple, blue and red, the beauty of which cannot be described; but which depend on the different degrees of the reduction."

With a needle pass a thread through a small bit of phosphorus, previously freed from moisture by immersing it in alcohol. If this be suspended in an aqueous solution of nitro-muriate of gold, in a few minutes the phosphorus will become covered with pure gold.

If a piece of white silk be dipped in an aqueous solution of nitro-muriate of gold and exposed while wet to sulphurous acid gas, the whole piece will in a few seconds be covered with a coat of reduced gold, which remains permanent.

If a piece of white silk be immersed in an aqueous solution of nitrate of silver, thoroughly dried in the dark and then exposed to sulphurous acid vapours, it will suffer no change; nor, if it be wetted with alcohol and then replaced in the vapour, will any sign of reduction appear; but if it be wetted with pure water and then exposed to the vapour, metallic silver will immediately be seen on its surface.

A glass funnel is a convenient apparatus for these experiments. The silk may be suspended by a thread passed through it and made fast to the funnel with a cork. The funnel is then to be placed on a table and by moving it a little over the edge of the table, a lighted match may be readily introduced, and when the glass is full of vapour the match may be withdrawn. The vapour is confined by sliding the funnel back upon the table; and thus the phenomena of the experiment may be easily observed.

Dip a piece of white calico in an aqueous solution of acetate of lead and then drop a little solution of sulphuret of potash upon it. If this be now placed in the palm of the hand, the lead will be observed gradually to revive and will soon be reduced to its metallic state.

Dissolve some sulphuret of potash in alcohol and immerse a slip of white silk in the solution. If a drop of an aqueous solution of sulphate of manganese be now applied, films of metallic manganese, bright as silver, will instantly appear.

If a bit of silk be immersed in diluted acetate of lead and exposed while wet to a stream of sulphuretted hydrogen gas, a brown tinge will instantly diffuse itself, like a passing shadow, over the whole surface of the silk, accompanied with a bright coat of reduced lead resembling silver.

If a piece of silk be immersed in an aqueous solution of muriate of tin and exposed while wet to a stream of the same gas, reduced tin of great brightness will immediately cover the surface, and in a little time this will be accompanied by various colours, such as blue, orange and purple.

A piece of silk, treated in the same way, but dipped in an aqueous solution of muriate of arsenic, will be covered with resplendent metallic arsenic, attended with a citron-yellow colour.

Prepare two glasses of very dilute nitrate of copper; into one drop a little liquid ammonia and into the other some diluted arseniate of potash. The addition of these two colourless solutions will produce very different effects; for the one glass will have an abundant precipitate of a brilliant sapphire blue, and the other a precipitate of a beautiful grass green.

(To be continued.)

ZOOLOGICAL STUDY OF MAN.

THE zoological study of man, when grounded on a knowledge of his organisation and functions, and enlightened by the analogies, the contrasts and the various aids afforded by an acquaintance with the animal kingdom in general, is the only means by which a clear insight can be gained into human nature, into the physical and moral attributes, the comparative powers, the liability to change or modification of the individual, the race or the variety, and, consequently, into the frame, capabilities and destiny of the species. The principles furnished by such investigations are the safest guide in all branches of knowledge, of which man in any shape is the object; the only guide at least that can be trusted by those who are determined to resort to nature for themselves, rather than blindly adopt established doctrines, or take up the ready-made notions and clever systems, so kindly provided for those who are too indolent or too timid to exercise their own observation and reason on these important topics. Such inquiries, it may be added, afford the only light capable of directing us through the dark regions of metaphysics, the only clue to direct our course through the intricate mazes of morals. Can we hope to proceed safely in legislation, in public institutions, in education, without that acquaintance with the physical and moral qualities of the subject for whose benefit they are designed, which such investigations are calculated to supply?

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THE GLEANER, No. 34.

ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

These endowments are extremely various, and their diversities constitute the differences between the properties of the several tissues. Thus we find certain cells whose agency is exerted in developing a preliminary organisation or vitalisation in the liquid *pabulum* (food), which, when thus prepared, is to be yielded up for appropriation by other cells in process of development; this process we have designated by the term *assimilation*. Again: there are other cells which are distinguished for their power of *reproduction;* their functions, as individuals, being apparently confined to the preparation of the germs of a new generation. Others, again, are characterised by the change of form which they undergo, after having obtained their development as cells: this change of form, rendering them subservient to some new purposes in the economy, originates entirely in their own vital activity, and must be considered as indicating a power of *transformation*. In many other instances, the endowments of the cells are manifested in their power of effecting *chemical transformations* of a kind which we do not meet with under any other circumstances, and both in animals and plants, but in the former more especially, we find a number of cells endowed with the power of giving rise to *mechanical motion*, either by a sudden or temporary change of form, as in the contraction of a muscle, and in most of the sensible motions of plants, or by the vibratile action of certain filaments attached to the exterior of the cells and called *cilia*. Other cells in the animal body have it as their special endowment to generate that peculiar power which we call *nervous agency*, the operation of which is more nearly allied to that of electricity, than to that of any other power with which we are acquainted, though not identical with it.

Now all these endowments may be regarded as related to each other through their common parentage, being all manifestations of the power existing in the living cell, and consequently of the power by which that cell was formed. We may best express the distinctive character of vital activity, therefore, by describing it as essentially manifested in *cell-formation*, and it will be convenient to employ the term *vital force* as an expression of the agency by which this is done. That the numerous operations enumerated in the preceding paragraph, as effected by cell-agency, are to be regarded (however dissimilar in themselves) as so many manifestations of this vital force, acting through different instruments, appears probable from this consideration, namely, that each endowment is so far inconsistent with the rest, that it would seem as if the expenditure of the vital force of the cell upon that one purpose unfitted it for any other. Thus the assimilating cells do not exercise chemical transformation; they do not undergo change of form; they do not exert mechanical or nervous power; and it is doubtful whether they reproduce themselves. So, again, the cells which are especially endowed with

the reproductive power seem to possess no other, whatever may be the peculiar endowments of their progeny, and the cells which are operative in chemical transformations are destitute of the power of exciting mechanical movement, as they are also of reproductive force; and the same is true on the opposite side of the cells concerned in mechanical movement, which are incapable of exercising chemical transformations as they are of continuing their race.

Another argument for the mutual relation here contended for, is furnished by the analogy or likeness of the forces operating in the inorganic world. Reasons have been lately given for the belief that physical forces of every kind—namely, heat, light, electricity, magnetism, chemical affinity and that which produces or resists motion—have a reaction of mutual dependence; each being capable of producing any one of the rest, either directly or through the medium of some other; and each being consequently producible by any of the remainder. And we may observe, that this conversion of one force into another is due to its passage through some material body. Thus the motion of a body retarded or resisted by friction, gives rise to heat; and heat applied to any form of matter produces its expansion; that is, motion. The friction of two dissimilar bodies produces not merely heat, but electricity: and heat itself, when made to act on certain combinations of metals, also produces electricity; whilst, on the other hand, the electric current may produce heat, light, magnetism or motion, according to the nature of the substances through which it is transmitted. Light, heat and electricity, again are closely related to chemical affinity, which is often specially excited by them, and which can, in its turn, generate these forces; a material *substratum* being required in both cases.

Now the relation which exists among the several endowments peculiar to organised structures, and therefore distinguished as *vital*, appears to be most appropriately expressed in the very same form: they may be said to have a relation of mutual dependence in such a manner, that each can either directly or mediately produce the other. The most universal and characteristic of these forces has been shown to be that from which "cell-formation" proceeds, and out of these arise all the other agencies. Thus the tissue of the muscle is constructed solely for contractile power; and the development of nervous matter has reference entirely to the peculiar agencies in which it is to be concerned. The contraction of a muscle, and the production and transmission of a nervous impression, are phenomena of a distinctly vital character; and it will hereafter appear, that with the manifestation of the peculiar attributes of these tissues they cease to maintain their existence as living structures—as if the general vital force which they previously possessed, had been expended in its conversion into the muscular and nervous powers. Here, too, we see that a certain material *substratum* is required for the conversion of one force into another; the vital force only being able to produce only contractile action, by means of a certain variety of organised structure which we term muscle; whilst it can only develop itself as nervous agency through that peculiar form of tissue which is called nerve. Again: we find that the nervous force can evoke the muscular, and this in a degree proportional to the intensity of its own excitement; and nervous agency would seem capable of influencing cell-formation, in such a manner as to justify the idea that it is actually reconverted into the form of vital force concerned in it.

(To be continued.)

PASSING EVENTS,

IN WHICH MEDICAL BOTANISTS ARE INTERESTED.

To the Editor of the Botanical Journal.

DEAR SIR—Will you have the goodness to state that those able and distinguished advocates of medical freedom, Mr. Thomas Duncombe and Dr. Mitchell, have been returned to the new Parliament, as have also Sir E. Grogan and Messrs. Coningham, Henley and Barrow, all stanch friends of the medical liberties of the people, and hostile to compulsory vaccination.

I read in the *Illustrated Times*:—"Revaccination does not seem to have agreed with the French army. In the

10th regiment of artillery at Toulouse, so many men have been laid up in consequence, that the Emperor had sent down Dr. Larry to see about it."

Dr. Larry has since reported, "that in sixty men of the French army, revaccinated at Toulouse, serious symptoms of a typhoid and erysipelatous nature ensued, as a consequence, in nine of them. He advises the Minister of War, that in future only a small number of men of a regiment should be vaccinated at once, so that they may not be forced to return immediately to their duty; that only those *of free will* shall be vaccinated; that the operation should not be performed in the hot season."—*Times* and *Medical Times* of Monday, 18th September, 1858.

It took much writing and prolonged experience to banish the murderous lancet; and the no less murderous blue-pill is slowly but surely following; "fluid lymph" must go too.

In restoring to the French soldier his free-will on a question so deeply interesting to himself—in giving him back freedom of opinion and action in a matter so purely personal—he has restored to him the dignity of manhood, and the rank of a rational being. Shall parents, in this free land of England, be treated with less delicacy and consideration? or shall they be reduced below the status of the Fr h soldier down to the level of the Russian serf? Parents themselves must give the answer. JOHN STEPHENS.

19*th May*, 1859.

ON THE PSEUDO-SCIENCES.

(Continued from page 197.)

WE should especially (*speaking ironically*) recommend Dr. Simpson's happy quotation to professors of logic, as a kind of text-book of "Examples in Illogisms," or exercise for students upon the logical classifications of various errors. Does nature cure by similars? "Similia similibus curantur" (in English, "Like things are healed or cured by like things") answers Hahnemann. This motto, at the real basis of homœopathy, is crude, quaint and false, and not even the best Latin in the world. We should have preferred "Medentur" (are healed), though, unfortunately for Hahnemann, that would not have altered his facts or given them a show of truth. In the first place, "Like diseases do not cure like diseases." Secondly, if they did, even in some instances, which they do not, *all* like diseases do not cure all like diseases; and this is a plain petitio principii (in English, begging the principle or question). Now this is important, though generally overlooked, for the error in this respect is a good instance of Hahnemann's style of reasoning. He thought he found out this grand secret from the observation of the effect of *quinine* in ague and in health; and forthwith, in this special instance, reasoned to the general law, "Similia similibus curantur." The observation, even if correct, could be suggestive only of an *hypothesis*. The evolution of the *law* was illogical. Now let us take another vaunted and praised proof of homœopathic curing—"Your hand is burned; the best cure is to hold it to the fire." Now those who, with any pretensions to surgical skill, make such a statement, are either ignorant or dishonest or both. First, let us look at the case: Surgeons make a very important distinction between different burns, founded upon the degree of their intensity: they are called of the first, second, or third degree, and it is to the first two varieties only that this plan of treatment refers, and therefore not to burns, but to *some* burns. But after all, it is *not* a *plan* of treatment, but merely a temporary resort, and that not according to the law "Similia similibus curantur;" in which case the attempt should be to *simulate the burning*, that is, to burn again; but a nurse applies the heat temporarily to *keep away the cold air*, and not to simulate the burning. This, however, is just the style of illogical reasoning from incorrect data which pervades the whole system of homœopathy.

6. *Errors arising from logical reasoning from incorrect data.*—These are errors more common among scholars and scientific men than almost anywhere else. The qualities for the observation of facts or phenomena may be perfect, but unexercised; the things stated unobserved or unexamined; and processes of reasoning only gone through, rather than a thorough sifting, not only of arguments,

but the grounds of the argument. There is a very striking exemplification of this in the history of one of the most advancing sciences of the day—chemistry. Till a comparatively few years ago, it was stated that there were four *elements*, and that these four elements were earth, air, fire, and water. The chemical definition of an element was then as perfect as now, but we have now very different notions, both of the number and nature of the elements. Given, these four elements, and all material substances must be made up of them, either by a direct or indirect union, the differences in the substances produced being the result either of the nature of the union, the quantity of the material, or the method of commixture. This is necessarily a logical and legitimate conclusion from these data, but the data are false. For example: EARTH is made up of fifty or sixty elements, and is thus far itself a compound, both chemically and mechanically. AIR is composed of all substances capable of existing in the gaseous state at the ordinary temperatures, and essentially of one part of oxygen mixed or diluted with four parts of nitrogen. FIRE is no element at all, but the resulting phenomenon of chemical combination attended with heat and light. And WATER, finally, is a compound easily separable into its parts. Now the reasoning was logical enough beforehand; but the facts, it will be observed, were wrong, and therefore the conclusions were false.

Now the pseudo-science, phrenology, in many particulars, and especially in its foundation argument, is equally erroneous. It is conceded that the brain is the instrument, or, if you will, the *seat* of the mind: so far all physiologists allow; but phrenologists state further, that the brain has organs, or special developments, which correspond with certain qualities of mind, intellectual, moral, and animal, and that these are marked by certain prominences and depressions upon the cranium; that, therefore, these being known, the character of the individual may be described. Now if these data were correct, the conclusion would be true, for the reasoning would be logical; but, unfortunately for phrenology, in the first place the brain itself has no such organs, and they have, therefore, never been demonstrated; in the second place, there is no *necessary* correspondence between the surface of the brain and the external conformation of the skull; and, thirdly and lastly, the *suppressed premises* in this phrenological argument are also incorrect, or subvert the argument itself, for, allowing there to be organs in different situations upon the brain, when any combination of them is called into exercise, *what is it which communicates between the one and the other?* How does the *brain know* how to select the right organ, and when? *And if it do know all this*, what need has it of these organs at all? for surely there is mind enough in this very seclective power for all the effects we ever see produced by mind. The mind must have all the feelings, capacities, perceptions, &c., without the organs, or it would not know one organ from another; and if it have all these things, they are not the cause of variety in mind, therefore they can be no guide for that variety; and they are not the effect of variety in mind, for they are developed in chilhood, in absolute infancy, nay, in fœtal life, before the mind can exercise variety; for, say the phrenologists, the cranial developments are the result of a moulding process of the brain and its organs upon the bone. Now either the brain moulds the shape of the bone, or the bone moulds the shape of the brain. The phrenologists must believe this (though we do not), for they assert that the one corresponds with the other, otherwise, indeed, their developments would be of no use. Now if the brain moulds the shape of the bone, it does so at a period when the mind is so utterly undeveloped, that no cephalic organs can be the result of its exercise; on the other hand, if the bone moulds the brain, then, as the organs are the development of the exercise of the mind, therefore the mind must be in the bone! and the brain is not the seat, organ or instrument of the mind. But they started with that statement.

7. *Errors arising from partial instead of complete observation.*—This is too evident a source of error to render it necessary for us to dwell long upon it. Who, that has read the admirable tale of the chameleon, can ever forget this

cause of fallacy? We have witnessed this error in chemistry, in reference to earth, air, fire and water; then, again, in phrenology, no one, who will take the trouble carefully to examine the subject practically, will doubt, that not only does not the external plate of the skull correspond with the surface of the brain, but the external plate does not correspond with the internal plate, much less with the brain, between which latter two there is a potential cavity.

If observation be not complete, we almost necessarily conclude crroneously on the subject in hand. It is difficult enough for most people to reason correctly with a perfect knowledge of the facts of the case on which a conclusion is sought; how much more so when part of these facts only is known!

(To be continued.)

EXPERIMENTS IN CHEMISTRY.

(*Concluded from page* 203.)

Miscellaneous Experiments.

TAKE a slip of blue litmus paper, dip it into acetous acid, and it will immediately become red. This is a test so delicate, that, according to Bergman, it will detect the presence of sulphuric acid, even if the water contain only one part of acid to thirty-five thousand parts of water. Litmus paper which has been thus changed by immersion into acids, is, when dried, a good test for the alkalics; for, if it be dipped in a fluid containing the smallest portion of alkali, the red will disappear, and the paper be restored to its original blue colour.

Take a slip of turmeric paper, and dip it into any alkaline solution; this will change the yellow to a deep brown. In many cases turmeric is preferable to litmus paper for detecting alkali in solution, as it suffers no change from carbonate of lime, which is often found in mineral waters. This paper will detect the presence of soda, though it should amount to no more than $\frac{1}{2200}$dth part of the water. The paper thus changed by an alkali, would, if dried, be still useful as a test for acids, as these restore its original yellow.

Into a large glass jar, inverted upon a flat brick tile, and containing near its top a branch of fresh rosemary, or any other such shrub, moistened with water, introduce a flat thick piece of heated iron, on which place some gum benzoin in gross powder. The benzoic acid, in consequence of the heat, will be separated, and ascend in white fumes, which will at length condense, and form a most beautiful appearance upon the leaves of the vegetable. This will serve as an example of sublimation.

Introduce a little carbonate of ammonia into a Florence flask, and place that part of the flask which contains the salt on the surface of a basin of boiling water: the heat will soon cause the carbonate of ammonia to rise undecomposed, and attach itself to the upper part of the vessel, affording another example of simple sublimation.

Mix a little acetate of lead with an equal portion of sulphate of zinc, both in fine powder; stir them together with a piece of glass or wood, and no chemical change will be perceptible; but if they be rubbed together in a mortar, the two solids will operate upon each other; an intimate union will take place, and a fluid will be produced. If alum or Glauber salt be used instead of sulphate of zinc, the experiment will be equally successful.

Pour a little water into a phial containing about an ounce of olive oil. Shake the phial, and if the contents be observed, we shall find that no union has taken place. But if some solution of caustic potash be added, and the phial be then shaken, an intimate combination of the materials will be formed by the disposing affinity of the alkali, and a perfect soap produced.

Put a little common sulphur with one-eighth of its weight of nitre, into an iron dish, place it under a jar of oxygen gas, and set fire to it, and sulphuric acid will be formed. This is an example of the formation of an acid by combustion.

Take the acid formed in the last experiment, concentrate it by boiling, mix it with a little powdered charcoal, and submit the mixture in a Florence flask to the heat of an Argand's lamp. By this process sulphur will be regenerated, and will sublime into the neck of the flask. An example of the decomposition of an acid.

Melt sulphur in a small iron ladle, and carry it into a dark room in the state of fusion. If an ounce or two of copper filings be now thrown in, light will be evolved.

Fuse a small quantity of nitre in a crucible, and, when in complete fusion, throw pulverised coal into it by small quantities at a time. The carbonaceous matter will decompose the nitre, and the bituminous part will burn away without acting upon it. This experiment will exhibit a mode of analysing coal; for every one hundred grains of nitre that are decomposed in this way, denote ten grains of carbon.

If hot water be poured into a glass jar of cold water, it will remain on the surface; but if cold water be poured upon hot water, it will sink to the bottom of the vessel. This experiment may be rendered more obvious by colouring that portion of the water which is poured in. The design of this experiment is to show the change of the specific gravity of the same body, merely by the agency of caloric.

Into a glass of water containing a small portion of common salt, drop some of a clear solution of nitrate of silver, and an insoluble precipitate of muriate of silver will be produced. This experiment is designed to give the pupil some idea of the method of analysing mineral waters. Every one hundred grains of this precipitate, when dried, indicate forty-two grains of common salt.

Into a glass of Aix-la-Chapelle water, or water holding a small portion of potash, drop a little of the solution of nitro-muriate of platina, and an immediate yellow precipitate will be produced. This affords another instance of the nature of the means usually employed to detect whatever substances may be dissolved in mineral waters.

Into distilled water drop a little spiritous solution of soap, and no chemical effect will be perceived; but if some of the same solution be added to hard water, a milkiness will immediately be produced, more or less, according to the degree of its impurity. This is a good method of ascertaining the purity of spring water.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

A VOCABULARY OF CHEMICAL TERMS.

(*Continued from page* 198.)

Deflagration.—The vivid combustion that is produced whenever nitre, mixed with an inflammable substance, is exposed to a red heat. It may be attributed to the extrication of oxygen from the nitre, and its being transferred to the inflammable body; as any of the nitrates or oxygenised muriates will produce the same effect.

Deliquescence *of solid saline bodies*, signifies their becoming moist, or liquid, by means of water which they absorb from the atmosphere in consequence of their great attraction for that fluid.

Deliquium.—The state of potash, or any deliquescent salt, when it has so far deliquesced by exposure to the air as to have become a liquid.

Delite.—A term used by some of the French writers, signifying to break, by the action of the air, like a soft stone, into layers.

Deoxidise (formerly Deoxidate).—To deprive a body of oxygen.

Deoxidisement.—A term made use of to express that operation by which one substance deprives another substance of its oxygen. It is called unburning a body by the French chemists.

Dephlegmation.—The act of separating the water from chemical liquors.

Depuration.—The purging or separating any liquid in a state of purity from its fæces or lees.

Detonation.—An explosion with noise. It is most commonly applied to the explosion of nitre when thrown upon heated charcoal.

Digestion.—The effect produced by the continued soaking of a solid substance in a liquid, with the application of heat.

Digester, *Papin's*.—An apparatus for reducing animal or vegetable substances to a pulp or jelly expeditiously.

Distillation.—A process for separating the volatile parts of a substance from the more fixed, and preserving them both in a state of separation.

Docimastic art.—The art of assaying metals.

Ductility.—A quality of certain bodies, in consequence of which they may be drawn out to a certain length without fracture.

Dulcification.—The combination of mineral acids with alcohol. Thus we have dulcified spirit of nitre, dulcified spirit of vitriol, &c.

Edulcoration.—Expressive of the purification of a substance by washing with water.

Effervescence.—An intestine motion which takes place in certain bodies, occasioned by the sudden escape of a gaseous substance.

Efflorescence.—A term commonly applied to those saline crystals which become pulverulent on exposure to the air, in consequence of the loss of a part of the water of crystallisation.

Elasticity.—A force in bodies, by which they endeavour to restore themselves to the posture from whence they were displaced by any external force.

Elastic fluids.—A name sometimes given to vapours and gases. Vapour is called an elastic fluid; gas, a permanently elastic fluid.

Elective attractions.—A term used by Bergman and others to designate what we now express by the words chemical affinity; which see. When chemists first observed the power which one compound substance has to decompose another, it was imagined that the minute particles of some bodies had a preference for some other particular bodies; hence this property of matter acquired the term elective attraction.

Elements.—The simple constituent part of bodies which are incapable of decomposition; they are frequently called principles.

Eliquation.—An operation whereby one substance is separated from another by fusion. It consists in giving the mass a degree of heat that will make the more fusible matter flow, and not the other.

Elutriation.—The operation of pulverising metallic ores or other substances, and then mixing them with water, so that the lighter parts which are capable of suspension may be poured off, and thus separated from the grosser particles. Most of the metallic substances which are reduced to an impalpable powder are prepared by this process.

Empyreuma.—A peculiar and indescribably disagreeable smell, arising from the burning of animal and vegetable matter in close vessels.

Eolipile.—A copper vessel with a small orifice, and partly filled with water. It is made hot, in order that the vapour of the water may rush out with violence and carry a stream of air with it to increase the intensity of fires. It is an instrument of great antiquity.

Essences.—What are called essences in chemistry and pharmacy, are the essential oils obtained by distillation from odoriferous vegetable substances.

Essential salts.—The saline substances found in plants, and which are held in solution by the water wherein they are infused. They are obtained by evaporation and cooling.

Ethers.—Volatile liquids formed by the

distillation of some of the acids with alcohol.

Evaporation.—The conversion of fluids into vapour by heat. This appears to be nothing more than a gradual solution of the aqueous particles in atmospheric air, owing to the chemical attraction of the latter for water.

Euchlorine.—A compound of chlorine and oxygen, consisting of about eighty-two chlorine and eighteen oxygen. It may with propriety be called the protoxide of chlorine, as there are three other distinct compounds of these gaseous substances, each possessing more oxygen than euchlorine.

Eudiometor.—An instrument invented by Dr. Priestley for determining the purity of any given portion of atmospheric air. The science of investigating the different kinds of gases is called eudiometry.

Expression.—A term used in pharmacy denoting the act of forcing out the juices and oils of plants by means of a press. By a similar term the expressed are distinguished from the essential oils.

Exsiccation.—The act of drying moist bodies. It is effected in two ways; by exhaling the aqueous particles by the application of heat or atmospheric air, and by absorbing the moisture with soft and spongy substances. Thus, small matters are dried by chemists with bibulous paper; and larger masses, by spreading them on tablets of chalk.

Extracts.—The soluble parts of vegetable substances, first dissolved in spirit or water, and then reduced to the consistence of a thick syrup or paste, by evaporation.

Fat.—An oily concrete animal substance, composed of oil and carbon. Rancid fat and stale tallow generally contain a portion of sebacic acid.

Fermentation.—A peculiar spontaneous motion, which takes place in all vegetable matter when exposed for a certain time to a proper degree of temperature.

Fibrine.—That white fibrous substance which is left after freely washing the coagulum of the blood, and which chiefly composes the muscular fibre.

Filtration.—A chemical process for the depuration of liquid substances. Bibulous paper supported by a funnel is commonly made use of; but for expensive liquors chemists generally use a little carded cotton, lightly pressed into the tube of a glass funnel. The valuable concentrated acids should be filtered through pounded glass.

Fixity.—A term applicable to that property of some bodies of bearing a great heat without being volatilised.

Flowers.—Solid dry substances reduced to a powder by sublimation. Thus we have flowers of arsenic, of sal ammoniac and sulphur, unaltered except in appearance.

Fluates.—Salts formed by the combination of any base with fluoric acid.

Fluidity.—A term applied to all liquid substances. Solids are converted to fluids by combining with a certain portion of caloric.

Flux.—A substance which is mixed with metallic ores or other bodies, to promote their fusion; as an alkali is mixed with silica in order to form glass.

Fossil.—See Mineral.

Fuliginous.—A term made use of in describing certain vapours which arise in chemical operations, having the thick appearance of smoke.

Fulmination.—Thundering or explosion with noise. We have fulminating silver, fulminating gold and other fulminating powders, which explode with a loud report by friction or when slightly heated.

Furnaces.—Chemical vessels of several forms for the fusion of ores, or other operations which require heat.

(To be continued.)

ON POISONERS, POISONS AND POISONING.

In consequence of the great increase of poison cases both accidentally and designedly, we deem it a matter of duty to place before our readers both the indications to be fulfilled in cases of poisoning, with a table of the poisons, their forms, antidotes and form of exhibition, in order that they may be prepared, upon any sudden emergency, to administer the remedies as quickly as possible.

Though systems of poisoning have been known (thank Heaven! only to a few comparatively) from very early ages,

yet as the ages have progressed to modern times, so it appears the hideous crime has progressed; and the present time, alas! is dreadfully stained with its blackness, or rather, the consideration of the crime has been more present to mens' minds, so that if any unaccountable deaths happen, the occurrence is sifted to the bottom and the monster and his crime are brought to light. We much fear that prior to this period very many have been sent to their long homes by the above baneful crime, and no investigation has followed. Now, we live in an age when such things are taken cognizance of; the difficulties and the chances of being discovered are so greatly increased, that it is hardly possible to evade discovery, yet such is the constitution, or, I should rather say the misconstitution, of some minds, that no example frightens them; therefore, in case any of our readers should be brought under the influence of such disgraces to humanity, we have given them the means of counteracting their diabolical machinations, which will not only obviate all such malignant attempts, but afford ready reference in cases of accidental poisoning.

In the treatment of cases of poisoning, the indications to be fulfilled are several.

1st. The most important is the removal of the poison from the part to which it has been applied. From the stomach, it is removed by the stomach-pump, by the use of emetics (here our inestimable lobelia will be of incalculable service), and, in case of irritant poisons, by promoting vomiting with warm water and demulcents, such as linseed-tea or docoction of slippery elm, bark, &c. In corrosive poisoning (as by strong acids and alkalies) the use of the stomach pump is dangerous. If lobelia be not at hand, use the following household articles, which are the readiest to obtain upon any sudden emergency, namely, a dessertspoonful of mustard, a tablespoonful of common salt, stirred up in a tumblerful of water, or strong soapsuds may be used. From the *bowels*, the poison is best removed by laxative injections.

2nd. Another indication in the treatment of poisoning is the use of the chemical neutralisers called *chemical antidotes*. These either render the poison insoluble, and thereby prevent its absorption, or convert it into a comparatively harmless soluble substance.

A third indication is to sheath the living part from contact with the poison, by which not only the poisonous irritant action, but also the absorption of the poison, is prevented or lessened; which is effected by the following mechanical agents or antidotes: thus, in poisoning by caustic or acrid substances, considerable relief is generally obtained by the use of diluents, oily, mucilaginous, and other demulcent liquids, and fine, impalpable powders. These substances lessen the injurious action of the poisons by diluting and enveloping them, by sheathing the mucous surface of the stomach and intestines, and by obstructing absorption; hence they are termed mechanical antidotes.

A fourth indication is to counteract or relieve the effects of the poison. This is effected by agents which may be conveniently termed *dynamical antidotes:* thus coffee is given to counteract the narcotism produced by opium; ammonia, to relieve the depression caused by foxglove or prussic acid.

A fifth indication is to promote the speedy removal of the poison from the system after the absorption. Most poisons are absorbed into the blood, and are subsequently expelled from the system by the excreting organs; but it is very doubtful if we have any means of quickening their solution. Orfila has recommended diuretics (medicines acting by increasing the urine), but this plan has entirely failed in case of poisoning by arsenic, in which, as in many other instances, there was complete suppression of urine. In the case of arsenic, Flundin thinks that the poison is eliminated by the mucous membrane of the alimentary canal; and he therefore suggests that, to prevent a second absorption, the use of purgatives and chemical antidotes should be continued for a longer period than usual, and, perhaps to the end of the malady.

The following is a table of the poisons most generally used and most easily procured, with their antidotes and the forms in which such antidotes can be most readily obtained and employed.

POISONS AND THEIR ANTIDOTES.

POISONS.	FORMS.	ANTIDOTES.	FORM OF EXHIBITION.
Mineral acids.	Sulphuric. Nitric. Muriatic. Nitro-muriatic.	Alkalines and fixed oils.	Magnesia, with milk. Soapsuds. Diluted solution of carbonate of soda. Almond, olive or lamp oil.
Vegetable acids.	Oxalic. Tartaric.	Chalk.	Chalk or whitening, with water.
Hydrocyanic or prussic acid.	Diluted prussic acid. Cyanide of potassium.	Ammonia and its carbonate.	Carbonate of ammonia and water to be swallowed. Diluted ammonia to the nostrils. Artificial respiration of air impregnated with the vapour of ammonia.
	Essential oil of almonds. Bitter almond water. Laurel water.	Mixed oxides of iron.	Dissolve ten grains of sulphate of iron in one ounce of water, add a drachm of tincture of muriate of iron, to this solution add one scruple of carbonate of potass previously dissolved in two ounces of water—give this immediately.
		Chlorine.	A few drops of a solution of chlorine, or nitro-muriatic acid, mixed with water.
Alkalies.	Potash. Soda. Ammonia and their carbonates.	Acetic acid or citric acid. Oil.	Vinegar and water. Sour beer. Solutions of citric acid, lemon, orange or lime juice. Almond, olive or lamp oil.
Earths.	Caustic lime.	Carbonic acid.	Bottle sodawater.
Arsenic.	Arsenious acid. Arsenites. Arsenic acid.	Limewater. Hydrated magnesia. Hydrated Sesquioxide of iron Animal charcoal.	A mixture of oil and limewater, or milk and limewater. Light magnesia mixed with water. A mixture of tincture of muriate of iron or persulphate of iron supersaturated by carbonate of ammonia. Animal charcoal purified, or common ivory black.
Antimony.	Emetic tartar. Butter of antimony.	Tannic acid.	Solution of tannic acid. Astringent decoctions; as of tea, oak-bark, tormentil, or uva ursi. Astringent extracts dissolved in water.
		Alkalines.	See Mineral acids.
Mercury.	Corrosive sublimate. Nitrate of mercury. Calomel.	Albuminosa.	White of egg diffused in water. Yolk do. do. Milk. Wheat flour mixed in water.

Copper.	Sulphate. Verdigris.	Albuminosa.	See Mercury.
Zinc.	Sulphate. Acetate. Chloride.	Albuminosa. Alkalines.	See Mercury. See Mineral Acids.
Silver.	Nitrate.	Chloride of sodium or common salt. Albuminosa.	Common salt dissolved in water. Sea water See Mercury.
Lead.	Oxides. Carbonates. Soluble salts.	Alkaline or earthy sulphates.	For carbonate of lead, a mixture of sulphate, a mixture of magnesia and vinegar diluted. A solution of sulphuretted hydrogen or Harrogate water to be drunk.
		Hydrosulphurets.	Painters and workers in lead-factories, and others whose skin is impregnated with lead, should employ, as a sulphurated bath, a solution of four ounces of sulphuret of potassium in thirty gallons of water.
Tin.	Chloride (spirit of tin).	Albuminosa. Alkalines.	See Mercury. See Mineral Acids.
Iodine.	Solid iodine. Tincture of iodine.	Starch.	Decoction of starch (wheat starch), arrowroot or tapioca, flour and water, boiled potatoes, bread.
Opium. Belladonna, or deadly nightshade. Henbane. Stramonium. Colchicum. Veratrium. Foxglove. Monkshood.	Extract or tincture. Berries and herb. Herb.	Tannic acid. Animal charcoal.	See Emetic Tartar. See Arsenic.
Sulphuretted hydrogen. Sulphuret of ammonium. Sulphuret of potassium.		Chlorine. Hypochlorite of soda Do. of lime.	Inhale air slightly impregnated with chlorine. Hypochlorite of soda to be swallowed. A dilute solution of chloride. Dilute solution of chloride of lime to be swallowed.

And lastly Lobelia Inflata as an antidote for all poisons.

THE PATIENT'S SOLILOQUY

ON BEING GIVEN UP BY THE FAMILY DOCTOR, AND AFTER THE FIRST VISIT OF DR. COFFIN.

Addison altered.

It must be so!—Coffin, thou reason'st well!
Else whence this pleasing hope, this fond desire,
This longing after health despaired of?
Whence this secret dread, this inward horror,
Of leaving all most dear? Why shrinks the heart
Back on herself, and startles at the death-pang?
'Tis the desire of health that stirs within us;
'Tis Coffin's self that points out confidence,
And intimates our restoration.
Restoration! exhilarating thought!
Through what variety of murd'rous drugs,
What leeching, bleedings, blisterings, have I passed! [me—
The wide, the lengthened prospect comes before
And shadows, clouds and darkness rest upon it.
Here will I hold! If there are herbs to cure us
(And that there are, all nature cries aloud
Through all her works) they must be healthful,
And those whom COFFIN cures must be happy.
But when or where?—this world seems made for Allopaths—
I'm weary of conjectures. This must end them.
(placing his hand on COFFIN'S *Guide to Health)*
Thus am I nobly armed. My bane (the drugs) and antidote [to an end;
Are both before me: these soon will bring me
But this informs me health I shall regain.
The mind, secured in her confidence, smiles
At the drug-poisons and denies their power.
The stars shall fade away, the sun himself
Grow dim with age, and nature sink in years,
But Coffin's fame shall flourish in eternity,
Unhurt amidst the war of elements,
The wreck of matter and the crush of worlds.

J. W. G.

FLOWERS OF THE OLDEN TIME.—The floral beauties of Britain were confined to those wild flowers which are to-day the delight of childhood. The eyes of the "barbarians" looked upon the modest daisy, which then presented the same simple form that it does to-day. Primroses, nursed in the recesses of gnarled roots of trees, came forth in abundance in the spring; so did the blue-bell and the violet. These familiar flowers, with dog-roses, fox-gloves, traveller's-joy, flowering heaths, and water-lilies, were the chief beauties of the bouquet of ancient Britain. Fuchsias, balsams, dahlias, auriculas, hyacinths, pinks, tulips, roses, and a host of other beauties that now adorn our gardens and dwellings, were then quite unknown. Even the wall-flower, and the mignonette were strangers to our land; and the honeysuckle, which is now a common inhabitant of the hedges, came to Britain a stranger, and stole out of the confines of a garden to share the fortunes of our native wild-flowers. Nor was the state of the British flora peculiar to the earliest period. It prevailed, with only slight additions and improvements, down to the sixteenth century.—*Philp's Progress of Agriculture.*

NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

Dr. COFFIN may likewise be gratuitously consulted at his Agent's, Mr. T. Bean's, No. 7, Bridge-house-place, Newington-causeway, on every Monday evening, from half-past six to nine o'clock, and on every Thursday morning, from nine to one o'clock.

J. STEPHENS,

Eight years accredited Agent for Dr. COFFIN, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

Visits to Patients, 2*s.* 6*d.*, in advance.

G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

34, WORCESTER STREET,

Sole Agent for Dr. COFFIN in Birmingham, from whom all the Herbs, Roots, Barks, and preparations used in the Botanic Practice, can be had genuine.

Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

JOSEPH NADEN,

Sole Agent for Dr. COFFIN, 204½, *Shales-moor, Sheffield,*

Keeps constantly on hand all the Remedies used in Dr. COFFIN'S Practice; also Dr. COFFIN'S "Guide to Health," "Treatise on Midwifery," "Treatise on the Generative Organs," "A Course of Twelve Lectures," and "Botanical Journal."

Mr. NADEN is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

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J. RIDER.—Avoirdupois weight and imperial measure.

POST-OFFICE ORDERS and all communications for goods, &c., to be addressed to WILLIAM FORD, 134, High Holborn.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

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COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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BOTANIC HOSPITAL.

For some time there have been sums of money forwarded to Dr. Coffin to be kept in store, as they accumulated, for the purpose either of building an hospital or purchasing an edifice suitable for that purpose. The money now amounts to about £200. Dr. Coffin, not wishing to be any longer responsible for the money in his hands, gives this notice: that he will *return* the *several* sums to the *donors*, as they may direct; and those who have sent money under anonymous signatures or initials are requested to be particular in stating how it is to be returned. If any of the donors would rather that the money given should be appropriated to the poor, it shall be done, and statements of the same shall be given from time to time in the Journal. Dr. Coffin tenders his sincere thanks to those who have shown the kindness of their hearts in sending their donations, and feels now confident, that if *all those who have been benefited by his system and the exertions he has personally made* had but have contributed one half of the money they have themselves saved by not employing a legalised practitioner, the Medical Botanists would now have had an hospital as large as any in the metropolis. To those who have shown their zeal and kindness Dr. Coffin would say, that the project of having a Botanical Hospital is not by this notice given up; but that Dr. Coffin confidently hopes, from the arrangements he has made, that in a short time he will be able to erect an hospital which will be under his control and direction.

24, *Montague-place, Russell-sq., June 4th*, 1859.

THE GLEANER, No. 35.

ON THE NATURE AND CONDITIONS OF VITAL PHENOMENA.

If this view be considered to have a certain claim to reception as an hypothesis of the mutual relation of the various forms of vital activity, we have next to consider whether anything similar can be traced between the vital and the physical forces; since if such can be shown to exist, the probability of the hypothesis will be greatly increased. Now it will be shown that all vital activity is dependant upon the constant agency of one at least of the physical forces already enumerated, viz., heat, and that light and electricity, operating through chemical affinity, are also concerned in sustaining particular forms of it. These agents, indeed, which have long been known under the term vital stimuli, may perhaps be more justly considered as the real forces concerned in the production of vital phenomena, modified in their operation by the organised structure through which they are exerted; just as heat becomes electricity when it passes through a certain combination of metals. And this idea is borne out by the fact that the vital forces appear capable of being in their turn reconverted into the physical; as in those numerous cases, already referred to, in which the whole energy of one set of cells is directed to the performance of some *chemical* transformation, and that of another to the production of *mechanical* movement, as well as to other instances, in which it seems nearly certain that the liberation of electricity, and perhaps also of heat and

light, are due to nervous power operating through a particular structure. Indeed, when we come to consider the manifestations of nervous agency in more detail, we shall find that it is at least as closely related to electricity as electricity is to light or heat, and the intimacy of this relationship, existing between one of the most special or peculiar of all the vital forces and one of an exclusively physical nature, strongly confirms the idea just expressed in regard to the mutual connection of the remainder.

In the consideration of this, or any other theory of life, it is very important to keep constantly in view, that it has relation only to the agencies concerned in the formation and conservation of the *material* organism. The phenomena of *mind* belong to another question altogether distinct, and cannot be considered as bearing any necessary relation to the former. It seems also necessary to point out, that in speaking of *forces* as possessing an absolute existence, it is not intended on the one hand to imply that they are anything else than "affections of matter," nor on the other to regard them in any other light than as the direct operation of the primal, all-sustaining Cause. We can form no conception of matter except as possessing *properties* which when in action give rise to *powers* or forces; whilst, on the other hand, we cannot think of *forces*, except as operating through some form of matter, of whose properties they are the manifestation. The existence of matter, and the action of the forces to which material phenomena are attributable, are alike the expressions of the Divine Will; and our aim must be limited to the discovery of the plan, according to which it has pleased the Creator to develop and maintain the existing condition of the universe we inhabit.

OF THE MATERIAL CONDITIONS OF LIFE, FOOD, WATER, OXYGEN.

Every organised structure requires to be placed in certain *conditions*, in order that its vital properties may be manifested in action; and although this is no more than is true of every form of inorganic matter, in regard to its physical and chemical properties, yet the conditions of vital activity are more numerous, and require to act in a more complex combination. It will simplify our consideration of them to arrange them into two groups; the first comprehending the *material substances*, of which a continual supply is required by all living beings; the second including certain *forces* brought to bear upon these substances, without the agency of which they could not be appropriated by the organism. There is an important difference in the relation of these two sets of conditions to vital activity; for whilst that activity cannot be increased by any augmentation of the *material supplies* beyond the amount normally required, it can be promoted by a more energetic operation of these *forces*, as well as retarded by their diminution, and the demand for the former will be modified accordingly. A simple analogy may render these distinctions obvious:—For the development of the power of the steam-engine two things are essential; the material substance, water, and the force of heat, by which the particles of the water are made to repel each other, and a powerful mechanical agency thereby obtained. Now, if the steam-engine be supplied with as much water as is required to maintain the proper amount in the boiler, no increase of that supply can of itself produce the least augmentation of the power of the machine; but, if increased heat be applied, the elastic force of the steam is augmented, and the power of the machine proportionably raised, whilst as the water is thereby more rapidly converted into steam, a larger supply of it is required for the maintenance of that power.

The material conditions essential to life are three:—food, or substances capable of being converted into the solid portion of the organised fabric; water, for the maintenance of the due proportion of liquid in its constitution; and oxygen, for promoting various changes in the assimilated matter by which it is applied to a greater variety of purposes, and also for uniting with the particles destined for excretion, so that they may pass off in the form in which they can be most readily got rid of.

Of Food.—It has been shewn that all vital action is dependant some way or other upon cell-formation, and it is obvi-

ous that the supply of materials for that formation is essential to its continuance. These materials, in the case of plants, are exclusively supplied by the inorganic world; for even when organic substances are used to promote vegetable growth (as in the case of manures), they act only by setting free the carbonic acid and ammonia which, with water, constitute the staple food of plants, and at the same time, it may be, by supplying certain mineral constituents of importance to their nutrition. It is only amongst the lowest tribes of the vegetable kingdom, however, that every cell directly obtains its food from the mineral world; for in all but the most homogeneous organisms, we find certain portions of the structure set apart for the purpose of effecting the requisite combination of oxygen, hydrogen, carbon and nitrogen, and of thus preparing a *pabulum* which shall serve not merely for their own growth and maintenance, but also for the formation of new parts elsewhere, which are destined for purposes of a different kind, and are not themselves capable of obtaining the materials of their growth from external sources.

Thus we shall find, that in the perfect plant, the requisite water is taken in by the spongioles of the roots; whilst the carbonic acid and ammonia are in part imbibed in solution in that liquid, but are in part also derived from the atmosphere, through the agency of the cells of the leaves and green surfaces; and the compounds formed in these cells serve as the pabulum for the growth of every other part of the organism, the new leaf-buds and flower-buds being developed, and the increase of substance taking place in the solid framework of the stem, roots and branches, entirely at its expense. The food of animals entirely consists, as formerly stated, of compounds which have been already generated by the agency of plants; but these compounds have first to be reduced to a condition in which they can be applied, by the various component tissues of the fabric, to their formative processes; and it is in the nutrient fluid thus prepared and circulated through the body, that each individual cell finds the materials of its growth.

(To be continued.)

CURES BY MEDICO-BOTANIC TREATMENT.

To the Editor of the Botanical Journal.

Dear Sir,—I send two cases for the Journal, that the public may be enlightened more on the botanic cause, as laid down by our worthy founder, Dr. Coffin, as they were treated by his esteemed "Guide to Health," after being into the hands of the regular fashion of the day, and all fail to do any good to the patients, and I just give the testimonials as they were sent in to me.

CASE OF AN ULCERATED BREAST.

To Mr. William Anderson.—Dear Sir,—I feel grateful towards you, and a great blessing to be able to make known to suffering humanity, that I am restored again to perfect health, through your treatment of me by Medical Botany, as founded by Dr. Coffin. I had a very bad breast for a long time, and tried a good many doctors, but instead of getting better I became a mere skeleton, was greatly reduced and confined to my bed; the discharge was very great, and brought me near to death's door. I resolved to try your medicines, and after taking them for a month I was able to do my own work, and in six weeks was well again, and would advise all suffering under the same painful disease to try your vegetable medicines. I am, respectfully, &c.,

A. Johnson.

Ludworth, January, 1859.

A SEVERE CASE OF NERVOUS DEBILITY.

The stomach of the patient would not contain any food whatever. I gave him the slippery elm flower for food. But let him speak for himself.

To Mr. William Anderson.—Dear Sir,—I return my sincere thanks most gratefully towards you for the kindness you have had in restoring my health again. I have suffered from nervous debility, excessive weakness and severe vomiting after partaking of anything, and have been attended by several medical gentlemen, but always the disease returned again, and having also a pain in the stomach for a very long time, but now I am perfectly restored and cured by taking your medicines for two months. For the benefit of suffering humanity and your

kindness I make known my case. You are at liberty to do with it what you think fit. Yours truly and respectfully,

MICHAEL SURTEES.

Haswell Colliery, March 11th, 1859.

P.S.—I might say that this man was fifty-eight years of age, and little hope of ever recovering, and now says that he is better than he had been for some time.

WILLIAM ANDERSON.

Shotton, near Durham, March 18th, 1859.

A CURE OF DROPSY.

TO DR. COFFIN.

DEAR SIR,—Having received so much benefit from the botanic treatment, I feel compelled, from a sense of gratitude to God and to you and your agents, to acknowledge the same, in the hope that others may be induced to persevere with the medicines, though their friends and former medical attendants may have given up all hope of their recovery. I have been out of health for many years, and for the last few years a confirmed invalid; suffering from a complication of diseases, so that it appeared next to impossible that I could be restored to any degree of health or ease.

The winter before last, I was kindly requested by my brother-in-law (who is a consulting chemist) to pass that season with him, so as to have every advantage possible, such as milder air and suitable medicines: he also consulted a physician, but received no encouragement from him as to my recovery; though from the kind nursing and attention I received from my brother and sister, I returned home somewhat better. In the following September I became very ill indeed; all our family doctor gave me availed nothing; my agony increased beyond what nature could endure with any degree of quietness. In this state, I begged my husband to go to Bedford and find out who it was that could cure dropsy; he was directed to your agent, Mr. Crick. I commenced his medicines, October 6th, 1858, and took a vapour bath twice a week; in a fortnight the pain had abated so much that I was able to walk two stone-throws from the house: my general health slowly improved but without any reduction of the dropsy. Knowing you would be at Bedford on March 22nd, 1859, I was thankful to embrace the opportunity of consulting you, and it will be long ere I forget the kind attention I received, or the many anxious faces I left awaiting an interview with you.

On April 7th, I went to Mr. Crick's, and the next morning, your skilful assistant, Mr. Waters, relieved me, by tapping, of upwards of ten quarts of water; he found my dropsy to be ovarian. Since that period, I have progressed most favourably: I am now active, cheerful, have a good appetite and am a slender figure; all my friends are surprised to see so great a change for the better. I received much kindness, attention and respect from Mr. Crick and family, and feel assured it was no small advantage being under his roof, as my medicines would be administered promptly according to my symptoms. If any sufferer should wish to know further particulars respecting my case, I shall feel great pleasure in replying to any inquiries.

I remain, dear Sir,
Yours very gratefully,
SELINA NEAL.

P.S.—My daughter has also received great benefit under Mr. Crick's treatment, being cured of a very severe attack of St. Vitus's dance. Her health is wonderfully improved.

Sweet Brier Farm, Warden, near Biggleswade, Beds, May 26th, 1859.

ALVINE CONCRETIONS.

SURGICAL writers have recorded many instances in which concretions of various sizes, and producing a series of very bad and even fatal complaints, have been formed round plum and cherry stones in the alimentary canal. The knowledge of the dangerous consequences which may ensue from swallowing such indigestible bodies cannot be too extensively diffused; for it is certain that this pernicious habit of children and thoughtless persons is by no means uncommon, and must be a more frequent occasion of ill-health, if not of death, than is generally supposed.

The symptoms induced by the lodgment of concretions of the above kind in the bowels are of a formidable description—severe pains in the stomach and bowels, diarrhœa, violent vomitings of blood and mucus, a discharge of thin fetid matter

from the rectum, a difficulty of voiding the excrement, an afflicting tenesmus, extreme emaciation, and debility.

That the foregoing account is not at all exaggerated may be seen by a perusal of the cases and remarks published on the subject by Mr. Charles White, of Manchester, and Mr. Hey, of Leeds.

We shall take the liberty of quoting a case from each of these gentlemen. The first example is one related by Mr. White, shewing the proper mode to be pursued, when practicable.

"Dr. Brown desired I would visit J. Parkinson, of Manchester, an out-patient of the infirmary, who had been some time under his care for complaints much resembling nephritic paroxysms, which the medicines usual in such cases had frequently relieved. The night before he had perceived a lump in the rectum, which had brought on a continual tenesmus. I found him extremely emaciated; the sphincter ani very much dilated, with a continual discharge of thin, excrementitious, and very fetid matter. Upon introducing my finger into the anus, I very distinctly felt a large body moveable in the rectum, which I easily took hold of with a pair of forceps, such as are used in lithotomy, and immediately brought away without much difficulty. It was a ball nearly as big as my fist, and, breaking in the extraction, discovered a plum-stone in the centre, which was its nucleus. Upon further examination I found there was another, which I extracted entire, nearly as large as the first. The patient recovered very fast, and in a month's time was a hearty, strong man."

The concretions which form round fruit-stones in the intestinal canal may become so large as to be incapable of passing onward to the rectum, and of course occasion fatal complaints. The annexed case, recorded by Mr. Hey, furnishes us with a proof of this remark. "I was permitted (says this practical writer) to examine the body of a boy, whose parents lived at Holbeck, near Leeds, and who had died in an emaciated state, having had long-continued pain in the abdomen, attended with frequent attacks of the ileus. I found lying in the transverse arch of the colon a concretion, which was become of so great bulk that it could pass no farther along the course of the intestine. This seemed to have been the sole cause of the boy's death."

Sometimes patients ultimately get well by voiding the concretions, either by vomiting or stool. Mr. Charles White gives us an account of some such instances; in one, fourteen concretions on plum-stones were discharged from the anus; in another, twenty-one similar bodies were ejected from the stomach.

The latter gentleman concludes some interesting cases with warning practitioners, and mankind in general, of the great danger of swallowing fruit-stones, and he doubts not that many persons have lost their lives from this cause, when the disorder has not been understood, but been mistaken for the cholic.

ANATOMY.

We have been requested to furnish a few articles upon this subject, in order that our articles upon fractures and dislocations may be understood by the majority of our readers, and as an extension of our little account before furnished. We shall, therefore, do this in language as plain as possible, in order to make it intelligible to those who may not understand the technical terms of the science.

OF THE SKELETON.

It consists of two hundred and fifty-four separate bones, and weighs from one hundred and fifty to two hundred ounces.

We now commence with the skull, which contains eight bones. The first which we mention is the os frontis (the front bone), which forms the upper and fore part of the skull; its lower parts compose the upper portions of the orbits of the eyes. In the centre of the lower part of this bone is placed also the *ethmoid bone* (sieve-like), which is situated at the top of the cavity of the nostrils.

The parietal or top side bones are two. They are of an irregular square figure, and are bordered with indentations through their whole circumference, except at the lowest part. These bones form a kind of vault to the head.

The occipital bone forms the back and lower part of the skull, and has considerble indentations.

The temporal bones are two, having several cavities and processes.

The *os ethmoides*, or sieve-like bone, is about two inches in circumference. It is situated at the fore part of the base of the skull.

The *os sphenoides*, wedged-shape bone, is of a very irregular shape. It is seated in the middle of the base of the skull, and is bounded by the front bone, sieve-like bone, ploughshare bone or vomer, occipitis (back bone), upper jaw, top side bones, palate bones, eye bones, and temporal bones.

The sutures or joinings of the skull are the following:—First, the coronal, which joins the parietal bones to the frontal; it runs across the skull from one upper edge of the sphenoidal bone to the other. Second, the sagittal, joining the parietal bones together; it issues from the centre of the frontal bone, and is continued over the head to the occipital bone. Third, the squamous suture, which is formed by the upper part of the temporal and sphenoidal bones wrapping over the lower edge of the parietal bones. Fifth, the transverse suture, which runs through the bottoms of the frontal bone, and joins the lower edge of the frontal bone to the sphenoides, upper jaw, nose bone, and other bones of face and mouth.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

PENNYROYAL (Mentha Pulegium).
MOUNTAIN FLAX (Linum Catharticum).

Pennyroyal.—Long cultivated in gardens on account of its medicinal qualities. It is occasionally found naturalised on wet commons, and on the margins of brooks, flowering in August and September. It is the smallest we have of its genus, and is readily known by its prostrate stems, small, downy, recurved leaves, and numerous thick whorls of purple flowers. The smell is peculiarly pungent, and unlike that of any other native mint.

Medicinal Qualities.—This is a valuable sweating herb, highly useful in fever cases of children; good for obstructions in the female system; and is likewise useful in hysterical complaints and whooping cough.

Mountain Flax.—An annual species, very abundant everywhere in dry, hilly pastures, especially where the soil is calcareous. Flowers from June till the end of August. The stems are slender, erect, five or six inches high, bearing small white flowers.

Medicinal Qualities.—It is an excellent purgative, and preferable to senna. For costive habits, it may be used with poplar bark or any of the bitter medicines. A handful of the fresh plant, or one drachm of the dried, may be used in infusion.

ON THE PSEUDO-SCIENCES.

(Continued from page 209.)

8. *Errors arising from mistakes in observation.*—These errors are similar in effect, though different in the process of evolution, to the last style of error referred to. They may be caused by carelessness, or by what will presently be mentioned, incapacity for observation.

PENNYROYAL.

MOUNTN FLAX.

The mistakes in this respect may be in reference to the facts or foundation of the argument; the motive of experiment; the process of experiment; the appreciation of the experimenter's reasoning, or the real nature of his results. Hence it is, that most practical philosophers are not satisfied with one inquiry simply; hence it is that they vary processes, working upon the same data, in order to see if the results they have obtained are products or educts; hence it is that they do not rush to the press before time and patient study have justified them in publishing to the world, not what may be, but what is. From this source arise misquotations and perversions of meanings. An amusing instance of this occurred in a provincial paper which reviewed Dr. Simpson's work against homœopathy—as it most decidedly and evidently is—as being an admirable treatise in its favour.

To our scientific readers, examples of controversies, arising simply from misquotations or incomplete references, will at once occur; some mistakes being as ludicrous as the one we have just referred to. How many persons are satisfied with partial quotations, forgetting the grand fact, that to quote, out of context, is, in nine cases out of ten, to misquote! These mistakes do not necessarily involve incapacity for this mental exercise, as we have before hinted, but rather, impatience of result, carelessness, or prejudice in favour of this or that opinion.

The homœopathists at one time, convinced of the ridiculous figure they made before the thinking part of the community, especially in reference to their decillionths of grains of nothing, as cogent, potent and powerful doses—seized, by a mistake in observation, upon a thing one Mr. Rutter invented, called a magnetoscope. (What's in a name?) This celebrated combination of mahogany, brass, string and sealing-wax, was, ha, ha! equal in effect to the divining-rod of old, or the magic triangles and circles of the Egyptians. Thus writes Dr. King, of Brighton, to Mr. Rutter, the wonderful inventor of this extraordinary instrument:—

"I may be thought too fanciful in the view I take of your beautiful, and, as I think, sublime discovery; but no reflecting mind will deny that we stand in need of some new principle or truth, to enable us to turn to full account those which we have already received. . . . . When I first saw your machine prove the polarity of a decillionth of a grain of silex, and when I first saw it respond to the billionth of a grain of quinine, I was seized with the same kind of awe as when I first studied the resolution of the nebulæ, and as when I first saw globules of blood and the filaments of the nerves through the microscope." We do not wonder at this awe-struck king of thought being so powerfully affected, for such phenomena are, to the weak, overpowering; while we reflect on the beautiful truth that "milk is for babes," we know that any appreciable amount of milk is stronger than the decillionth of a grain of silex, or the billionth of a grain of quinine! Alas! alas! for Dr. King, the would-be scientific!

Homœopathists have found it essential to give up "magnetoscopic demonstrations," and leave him in his awe-struck rhapsody with silex, quinine, "male fly's wings," and his wonderful bump of credulity; and we do not think that any reflecting mind will deny that Dr. King really *does stand* in need of a great many new truths.

9. *Errors arising from incapacity of observation.*—Who told you so? Who saw it? Who performed the experiment? These are most important questions; they strike at the root of belief on evidence; but they should have a reflex influence. Thus, are *you* qualified to observe the point at issue, leaving this for your own decision? We may remark, that we should not consult the premier of England on a case of heart disease, or a medical man on the suspension of the ever "impending crisis" in political affairs; but besides special adaptations to particular inquiries from pursuits and habits, there are qualities of mind which, when possessed, enable some to judge of some subjects better that others. Those who possess accuracy, veracity, no love of the marvellous, and whose education enables them to grapple with the subject in hand, are worthy of the highest credence, but these are not the followers of the popular

delusions now so much in vogue; and if some men of eminence have graced the heterogeneous ranks of these disciples of the pseudo-sciences, we feel sure that those among our readers who know such persons well, will be able to indicate, without difficulty, the point where the love of excitement, or the thirst for novelty, has been able to pervert the judgments of a mind otherwise capable and true. There are, indeed, persons so weak and credulous, as to be unworthy of all consideration. These are the people that quote, as scientific and veritable *facts*, instances of proof from Mrs. Crowe's "Night Side of Nature." Most admirable title! Most unhappy reference! for *never*, as far as *facts* and *conclusions* are concerned, were either authors or readers so much in the dark!

(To be continued.)

DISEASES OF THE EYE.

I.—OPHTHALMIA OF THE MEMBRANE.

Symptoms.—Piercing pain confined to a point, as if occasioned by the presence of extraneous matter; great heat and redness; the parts swell, and the vessels of the eye not only increase in size and become turgid, but appear more numerous than in the natural state. Great pain upon the least motion of the eyeball; morbid sensibility to light; effusion of tears from the lachrymal gland, of an excoriating quality. If the inflammation run high, a febrile disposition attends. After a longer or shorter continuance, these appearances gradually abate, or entirely cease; but in some cases, although the patient is left free from pain, tumour, and symptomatic fever, yet the suffused redness of the eye, and the external marks of inflammation, still remain, and long continue to exist after every other symptom has subsided. During the continuance of the inflammation, small ulcers are often formed upon the cornea, and little collections of matter are sometimes deposited between its laminæ, which frequently harden into white opaque specks, and either partially or totally obstruct the entrance of light. Matter is also sometimes effused into the chambers of the eye, and either remains in a fluid state, becomes inspissated, and produces a permanent adhesion of the iris, or assumes the shape of a membrane dividing the chamber into two distinct cavities. In some cases, the disease has been observed to assume an intermittent form, renewing its attacks after distinct intervals, or to have regular exacerbations at a particular time of the day.

II.—OPHTHALMIA OF THE TARSI.

This consists in a chronic inflammation (frequently with ulceration) of the sebaceous glands, which are situated in the tarsus, or edges of the eyelids. It is often productive of much irritation, and, when severe, occasions the destruction of the cilia or eyelashes. It is universally esteemed a scrofulous affection.

Causes.—External injuries, such as blows, contusions, wounds of the eyes. Extraneous bodies of an irritating nature introduced under the eyelids; exposure to bleak winds, and cold; too free a use of vinous and spirituous liquors; suppression of accustomed discharges; long exposure to strong light; a fixed attention to some minute object; trichiasis, or inversion of the eyelids. It is symptomatic of certain other diseases; as measles, smallpox, scurvy, scrofula, and syphilis.—Contagion?

Treatment of ophthalmia of the membrane.—The indications are to remove causes that continue to operate; to reduce the inordinate action of the vessels in the first stage of the disease; and to restore their tone, to increase their action, and thereby remove the congestion of the fluids, if the inflammation be contracted, and assume a chronic form. Look to the causes of ophthalmia for their removal. Foreign bodies, entangled in the eye, may be removed by a piece of wet lint attached to the end of a probe, or by a stream of water injected by means of a syringe; while the inside of the lid is turned outward, by the pressure of the forefinger and thumb of one hand, applied to its lower edge. Particles of iron, forcibly projected, often stick in the cornea: the most effectual means of removing them is the application of the magnet. Brisk purgatives, such as mountain flax, &c., and sedative, refrigerant, and slightly astringent fluid applications, may be ordered. The soft extract of opium, dissolved in boiling water, strained through

fine linen, and added to the liquor of acetate of ammonia, may also be used. Where the pain is very considerable, this is often productive of great relief.

IRRITABILITY AND ACTION OF THE HEART.

Even the curious mechanism of the heart is not more wonderful than is its incessant action, which is supported by the continual influx of stimulant blood, and by its high irritability and muscular power; for though we cannot directly trace the various courses of its muscular fibres, there is not in the human body any part in which the muscular substance is so dense and strong. In the heart there can be no direct or straight fibres; for let them go off from the basis of the heart in what direction they may, still as they belong to the one or the other ventricle, they must, by following the course and shape of that ventricle, form an oblique line. Vesalius has, indeed, not represented them so, he has drawn straight fibres only; because, in the latter end of his great work, he was without human subjects, and betook himself to drawing from beasts.

The fibres of the heart are all oblique, or spiral, some lying almost transverse; they all arise from a sort of tendinous line which unites the auricle to the ventricle; they wind spirally down the surface till the fibres of the opposite ventricles meet in the septum and in the apex of the heart. The fibres of each ventricle pass over the convex or upper surface of the heart, then over the apex, and then ascend along the flat side of the heart, which lies upon the diaphragm, till they again reach the basis of the heart. The second layer or stratum of fibres is also oblique; yet many of the fibres run almost transversely, uniting the oblique fibres; but when we go down into the thick substance of the heart, we find its fibres all mixed, crossed and reticulated in a most surprising manner.

There is no question that irritability is variously bestowed in various creatures, that it is variously appointed in various parts of the body, that this property rises and falls in disease and health: without hesitation we also may pronounce that the heart is in all creatures the most irritable part; it is the first part to live and the last to die. When we see the punctum saliens in the chick, we know that there is life; and when we open the body of an animal soon after death, still the heart is irritable and contracts.

In the very first days in which the heart appears in the chick, while yet its parts are not distinguished, and the punctum saliens is the only name we can give it, the heart, even in this state, feels the slightest change of heat or cold; it is roused by heat, it languishes when cold, it is excited when heated again. It is stimulated by sharp points or acids, it works under such stimuli with a violent and perturbed motion. In all creatures it survives for a long while the death of the body; for when the creature has died, and the breathing and pulse have long ceased, and the body is cold, when the other muscles of the body are rigid, when the stomach has ceased to feel, when the bowels, which preserve their contractile power the longest, have ceased to roll, and they also feel stimuli no more, still the heart preserves its irritability; it preserves it when torn from the body and laid out upon the table; heat, caustics, sharp points, excite it to move again.

We know also another thing very peculiar concerning the irritability of this organ, viz. that it is more irritable on its internal than on its external surface; for if instead of cutting out the heart we leave it connected with the body, seek out (as the old anatomists were wont to do) the thoracic duct, or pierce any great vein, and blow a bubble of air into the heart, it pursues it from auricle to ventricle, and from ventricle to auricle again, till, wearied and exhausted with this alternate action, it ceases at last, but still new stimuli will renew its force.

Thus it is long after apparent drowning or other suffocation before the principle of life is gone, and long after the death of the body before the heart be dead; and just as in this peculiar part of the system irritability is in high proportion, there are in the scale of existence certain animals endowed in a wonderful degree with this principle of life. They are chiefly the amphibious creatures, as they are called, needing

little air, which have this power of retaining life; no stimuli seem to exhaust them, there seems especially to be no end to the action of their heart; a newt's or a toad's heart beats for days after the the creature dies; a frog, while used in experiments, is often neglected and forgotten, its limbs mangled, and its head gone, perhaps its spinal marrow cut across, and yet for a whole night and a day its heart does not cease beating, and continues obedient to stimuli for a still longer time. It seems as if nothing but the loss of organisation could make this irritable muscle cease to act; or rather it seems as if even some degree of deranged organisation could be restored: breathe upon a heart which has ceased to act, and even that gentle degree of heat and moisture will restore its action. Dr. Gardiner having left a turtle's heart neglected in a handkerchief, he found it quite dry and shrivelled, but by soaking it in tepid water its plumpness and contractility were restored.

Since, then, this irritable power supports itself in parts long after they are severed from the body, what doubt should we have that there is in the muscular fibre some innate contractile power independent of nerves? And when we talk on a subject so difficult and so abstruse, what other proof can we expect or wish for than the power of one peculiar and insulated muscle, surviving the separation of the head and brain, the destruction of its nerves, or its total separation from that living system to which it belongs? If the heart be the most irritable muscle of the body, if all this irritability arises from the nerves, how can it be that this muscle, which is thus announced as the most dependant on its nerves, is really the most independent? that the muscle, which of all the body needs this nervous supply oftenest, should want it the least, and should survive the loss of its nerves so much longer than the other muscles of the same body?

(To be continued.)

ULCERS.

Ulcers are considered as healthy or vitiated. The former state is where the healing process goes gradually on, without interruption, until a cure is effected; the latter where some circumstance, either local or constitutional, forms an impediment to the healing of the sore; and hence, according to the nature of the cause, such ulcers have obtained various denominations; as, the indolent, the inflamed, the sinuous, the scrofulous, &c.

THE BENIGN OR HEALTHY ULCER.

Character.—Granulations, or little eminences, arising from the surface, of a florid red colour; small in size, and pointed at top; the discharge bland, white, opaque; the edges thin and even with the sore, being neither inverted nor retorted.

Treatment.—The object of the practitioner should be to preserve the healthy state of the granulations, and to promote cicatrisation, when they have attained the level of the adjacent skin. All sources of irritation should be avoided; perfect rest and an horizontal posture enjoined; and the use of mild and simple ointments, as common cerate, &c., persevered in. Compression with straps of adhesive plaster, the application of dry lint to the surface of the sore, and mild astringent ointment and lotions, constitute the treatment of ulcers.

LOCAL VITIATED ULCERS.

These are certain deviations from the benign or healthy state just described. The causes inducing the morbid change, or the impediments to healing, are numerous, and require separate consideration. Although greatly influenced, and often induced, by the general state of the body, as to vigour, debility, irritability, &c., they are totally unconnected with any specific constitutional taint.

The intentions in the treatment of each will be to obviate the particular cause that has induced the vitiated state, and to restore the ulcer to its original healthy disposition.

When an ulcer is inflamed, it has the following

Character.—The ulcer appears of a dark colour; it is surrounded by an extensive, inflamed ring, the surface is covered with a brown, transparent ichor.

Treatment.—Fomentations and cataplasms used until it lose its brown appearance, keeping the bowels open with mild aperients.

Ulcers which are irritable and inflamed

are produced by different causes, and are distinguished by different characters; the treatment being varied accordingly, viz.:

Character.—The margin of the surrounding skin jagged, and terminating in a sharp and undefined edge. The bottom made up of concavities of different sizes, without any appearance of granulations; the surface covered with a thin, ichorous discharge. It is exquisitely painful upon the slightest touch.

Cause.—As it is usually accompanied with a debilitated state of the part, and is relieved by tonics, it most probably is that irritability which is often the consequence of weakness.

Treatment.—In some instances cold applications succeed best in relieving the pain; in others, warm. Fomentations, therefore, or infusions, previously allowed to cool, may be successively used.

A VOCABULARY OF CHEMICAL TERMS.

(*Continued from page* 212.)

Furnaces, blast, are built for making iron, smelting ores, &c. They are so contrived that their heat is much increased by means of powerful bellows. A blacksmith's forge is a kind of blast furnace.

Furnaces, wind.—Chemical furnaces for intense heat, so constructed that they draw with great force, without the use of bellows.

Fusion.—The state of a body which was solid in the temperature of the atmosphere, and is now rendered fluid by the artificial application of heat.

Gallates.—Salts formed by the combination of any base with gallic acid.

Galvanism.—A new science, which offers a variety of phenomena, resulting from different conductors of electricity placed in different circumstances of contact; particularly the nerves of the animal body.

Gangue.—A term made use of to denote the stony matter which fills the cavities and accompanies the ores in the veins of metals.

Gas.—All solid substances, when converted into permanently elastic fluids by caloric, are called gases.

Gaseous.—Having the nature and properties of gas.

Gasometer.—A name given to a variety of utensils and apparatus contrived to measure, collect, preserve or mix the different gases. An apparatus of this kind is also used for the purposes of administering pneumatic medicines.

Gasometry.—The science of measuring the gases. It likewise teaches the nature and properties of these elastic fluids.

Gelatine.—A chemical term for animal jelly. It exists particularly in the tendons and the skin of animals.

Glass.—Some metallic oxides, when fused, are called glass. They have somewhat of resemblance to common glass.

Glass, phosphoric.—A vitreous, insipid, insoluble substance, procured by boiling down phosphoric acid to a syrup and then fusing it by an increased heat.

Glucium.—The pure base of the earth called glucina.

Gluten.—A vegetable substance somewhat similar to animal gelatine. It is the gluten in wheat flour which gives it the property of making good bread and adhesive paste. Other grain contains a much less quantity of this nutritious substance.

Graduation.—A process, by evaporation, of bringing fluids to a certain degree of consistence, in order to separate more easily the substances they hold in solution.

Graduation.—The division of a scale or measure into decimal or other regular parts.

Granulation.—The operation of pouring a melted metal into water, in order to divide it into small particles for chemical purposes. Tin is thus granulated by the dyers before it is dissolved in the proper acid.

Gravity.—That property by which bodies move towards each other in proportion to their respective quantities of matter. This is the property by which bodies fall to the earth.

Gravity, specific.—This differs from absolute gravity inasmuch as it is the weight of a given measure of any solid or fluid body, compared with the same measure of distilled water. It is generally expressed by decimals.

Gums.—Mucilaginous exudations from certain trees. Gum consists of lime,

carbon, oxygen, hydrogen and nitrogen, with a little phosphoric acid.

Hepar.—The name formerly given to the combination of sulphur with alkali. It is now called sulphuret of potash.

Hepatic, gas.—The old name for sulphuretted hydrogen.

Hermetically.—A term applied to the closing of the orifice of a glass tube, so as to render it airtight. Hermes or Mercury was formerly supposed to have been the inventor of chemistry; hence a tube which was closed for chemical purposes was said to be Hermetically or chemically sealed. It is usually done by melting the end of the tube by means of a blow-pipe.

Hydrates.—Those substances which have formed so intimate an union with water as to solidify the water and render it one of their component parts, are called hydrates. Common slaked lime is properly a hydrate of lime.

Hydro-carbonates.—Combinations of carbon with hydrogen are described by this term. Hydro-carbonate gas is procured from moistened charcoal by distillation.

Hydriodates.—Compounds formed by the union of certain substances with hydriodic acid.

Hydrogen.—A simple substance; one of the constituent parts of water.

Hydrogen gas.—Solid hydrogen united with a large portion of caloric. It is the lightest of all the known gases. Hence it is used to inflate balloons. It was formerly called inflammable air.

Hydrogenised sulphurets. — Certain bases combined with sulphuretted hydrogen.

Hydro-oxides.—Metallic oxides combined with water.

(To be continued.)

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Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

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Dr. COFFIN may likewise be gratuitously consulted at his Agent's, Mr. T. Bean's, No. 7, Bridge-house-place, Newington-causeway, on every Monday evening, from half-past six to nine o'clock, and on every Thursday morning, from nine to one o'clock.

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Mr. NADEN is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

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All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The real name and address of the writer of a letter must be given in confidence.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 290.—Vol. IX. SATURDAY, JUNE 25, 1859. Price 1d.

TO THE PATRONS AND READERS OF OUR JOURNAL.

It is with much regret that the Editor of the Journal is obliged to advert to a circumstance or two which has given him much pain; complaints having been made upon the matter and articles contained in the Journal. On the one hand the complaint is, that in the articles on fractures and dislocations, the terms used were not understood by certain parties. To obviate this difficulty he appended a short glossary of the anatomical names of the bones, and gave the English as plainly as possible, which he hopes has set aside that difficulty. He also adds, that it is not his fault that some of his readers cannot understand the subject: he endeavours to write in as plain a style as possible, consistent with the grammatical construction of the English language; and were he to write in the *provincial* dialect of some of his readers, he much questions whether such readers would understand the subject so well. It has been his endeavour to give articles from the plain to the more classical style, so that all his readers might be pleased and satisfied; and he must add, on his own behalf, that he spares no exertions to make the Journal acceptable to all.

On the other hand, a complaint has been made that the Journal contains too much chemistry, &c. This comes with rather a bad grace from the party who has always had the pages of the Journal open for his communications, and he knows there has been every attention shown to them. If there were anything in it with which he was dissatisfied, a hint given privately would have been much more courteous; and, as he has *talent*, an article or two from his pen, in the style and upon any subject *he* might think proper, would meet with every attention, and, as a matter of course, would be more satisfactory to him; or, at any rate, the finding fault would be remedied by the amendment. The Journal of late is said to be too chemical. Now, if there be any science more useful to mankind than chemistry, the Editor pleads guilty to the blame. What, he would ask, is the operation of *our* botanic remedies dependant upon but chemistry? What is man but an epitome, an union of chemical agency? What is digestion, what the formation of blood, but chemical action? We are surrounded by chemical action, affinities, &c., &c. Nay, the whole world and all which inhabit it are dependant upon chemical action, without which it would cease to exist; and, as many of these actions are as subversive of animal existence as the tendency of others is to promote it, how necessary, how important, then, is it that every one should be informed upon the subject, and thereby be enabled to reject the evil and choose the good! Besides which the Editor humbly conceived that the series of experiments printed in the Journal would be very interesting and useful, as the experiments were calculated to afford those of our readers, connected with the various manufactures, &c., some valuable hints that they might turn to most useful account.

The Journal is considered to be the organ of all connected with Dr. Coffin's system—if not, it ought to be—and has a claim to the support of the Society and all benefited by the system. Its

pages, so far as the Editor is concerned, have always been open to those who think proper to send articles for insertion which advocate the cause and principles of the system, there being, in the Editor's opinion, no necessity for running the Society to any expense by publishing, from time to time, short articles from the different members, as was suggested at the meeting of the Society last year in London, the Journal being the best and cheapest medium for their circulation. The publisher, their esteemed treasurer, reiterates that he loses considerably by it, and it is asl ttle as the more talented part of the agents can do to add their exertions to aid and support the Journal in every way, to save him from expense whom they so much esteem; and, as regards the letter adverted to in the recently published report of thc Society, the Editor neither saw nor heard of it till he read the report.

134, *High Holborn.*

THE GLEANER, No. 36.

THE MATERIAL CONDITIONS OF LIFE.

THE demand for food is proportional to the vital activity. Cold-blooded animals require a much smaller amount of food, and are able to sustain a deprivation of it for a much longer period, at low than at moderately high temperatures; their vital activity being at its least in the former case, and at its greatest in the latter. In this respect the animals that sleep during the winter correspond with the cold-blooded reptile, to which it is for a time like in its whole physiological condition.

The following curious fact, well known to naturalists, affords proof that the *kind* of food supplied may not only influence the ordinary process of nutrition, but may produce an important modification in the development of the organism. In every hive of bees the majority of individuals consist of *neuters*, which have the organs of the female sex undeveloped, and are incapable of reproduction; that function being restricted to the *queen*, who is the only perfect female in the community. If by any accident the queen be destroyed, or if she be purposely removed, for the sake of experiment, the bees choose two or three from among the neuter eggs that have been deposited in their appropriate cells, which they have the power of converting into queens. The first operation is to change the cells in which they lie into *royal* cells, which differ from them considerably in form, and are of much larger dimensions; and when the eggs are hatched, the maggot is supplied with food of a very different nature from the farina or bee-bread which has been stored up for the nourishment of the workers, being of a jelly-like consistence and pungent, stimulating character. After the usual transformations, the grub becomes a perfect queen, differing from the neuter bee into which otherwise it would have changed, not only in the development of the reproductive system, but in the general form of the body, the proportionate length of the wings, the shape of the tongue, jaws, and sting, the absence of the hollows in the thighs, in which the pollen is carried, and the loss of the power of secreting wax.

Of Moisture. — Independently of the utility of water as an article of food, supplying two of the most important materials (oxygen and hydrogen) for the construction of the tissues, a certain supply of moisture is requisite as one of the conditions without which no vital actions can go on. It has been already remarked, indeed, that one of the distinguishing peculiarities of organised structures is the universal presence of solid and fluid parts, and this is in the minutest portion of the organism, as well as in the aggregate mass, and for all the *vital* as well as the *chemical* actions in which these structures are concerned, the presence of liquid is essential, all nourishing materials must be reduced to the liquid form before they can be assimilated by the solids; and, again, the solid matters which are destined to be carried off by excretion must be reconverted to the fluid state before they can be thus withdrawn from the body. In all these operations, water is the liquid employed, and no other could be substituted for it. Taken as a whole, the tissues of animals contain a much larger proportion of water than those of vegetables; but this is because a considerable part of the fabric of the latter is usually destined for a long-continued existence, and is removed by consolidation out of all participation in vital actions.

Of Oxygen. — All living beings have

constant access to oxygen, in a free or uncombined state, either as a part of the atmosphere or diffused through the water which they inhabit. The source of demand for oxygen is common to all living beings, and its energy is proportioned to their vital activity. The muscular and nervous power of animals appears to be essentially dependant upon the union of oxygen with the elements of their tissues, and the maintenance of the standard heat of warm-blooded animals is dependant upon the process of combustion in the interior of their bodies, to which the presence of free oxygen is as essential as it is to the burning of hydrogen or carbon elsewhere.

INDIGESTION CURED BY BOTANICAL MEANS.

TO DR. A. I. COFFIN, M.D.

My dear Sir,—As a consequence of long and close application to business and study, I became mentally and physically prostrate. My stomach was so weak that it would not retain food, and I have for months, nearly day after day, thrown up the food which I had taken. I became exceedingly thin, weak and pale—a miserable object, exciting the sympathy of my friends, who invariably met me with a "Dear me, how very ill you do look!" I have suffered from the horrors of indigestion for five or six years, but these last two years I have been in the state above described, suffering from tightness on the chest, pains in the stomach, flatulence, vomiting, and debility.

I have been several times treated for the complaint by the medical faculty, but found it was of no use. I could obtain benefit only for a few days. I was, however, persuaded to try your system. I therefore first purchased a few copies of your Journal, *became interested*, then a copy of your Lectures, *almost convinced*, and then a copy of your "Guide to Health;" from the recipes therein contained I took a course of herb medicines with benefit, but, as a novice, considered it necessary to place myself under your care.

I thank God your success has been complete: my friends, remembering my former appearance for so long a period, are now astonished, and meet me with a "Dear me, how well you do look! I declare you are getting quite stout."

During my attendance on you I have also observed a marked difference in many of your patients; I have seen them one week entering the waiting-room very weak, emaciated, and looking miserable, and in two or three weeks I have seen them strong, getting stout, and happy.

From my heart I thank you, and heartily wish that you may live long to relieve suffering humanity, and receive their blessings and thanks.

I am, dear Sir, faithfully yours,

J. L.

P.S.—I will just mention that I now keep by me a stock of your herbs in powder in two-ounce bottles, so that when any temporary indisposition occurs to my family, consult your "Guide," and prepare the medicine required. I shall be happy to answer any communications made through you to prove the authenticity of the above.

Victoria Park Road, 1st June, 1859.

ON THE PSEUDO-SCIENCES.

(*Continued from page* 224.)

9. *Errors arising from innate love of the marvellous.*—Those who have not been in the habit of exercising their reasoning faculties upon subjects above the ordinary affairs of every-day life—and very few really have—cannot be expected to go through a process of reasoning out of *their* ordinary modes of thought. Numberless things are constantly occurring about them, of which they can give no satisfactory account to others, and indeed upon which they have not satisfied themselves. Cause and effect are to them almost foreign matters, or they are accustomed to resolve all effects into some generally acknowledged popular cause, which in nine cases out of ten is nothing more than a NAME. The more astonishing the name, the more it is apart from their ordinary conception, the more satisfactory the mental process becomes, and they deceive themselves into a belief that they have been reasoning. Instead of arriving, like the real philosopher, at an ultimate fact, they arrive at an ultimate step only—something beyond which they cannot go, although it is surpassed by hundreds daily. They do not recognise the mental process by which they deceive

themselves, and getting thus confused, shake their heads mysteriously and say with Hamlet, "There are more things in heaven and earth than are dreamt of in your philosophy;" which, if it mean anything, means this: because they are not included in philosophy, they must be believed as facts. This will do for the stage, but not for science. Hence arise lazy belief, the reception of facts, theories, principles, phenomena, on hearsay, and the conviction that any conclusion is better than suspension of judgment. It is one of the highest acquisitions of mind to be able to suspend judgment, and acknowledge our doubtful state to others. If more of us did this, there would be much less error in the world. Some people seem to think that there is no position between decision for or against a point—between belief in a principle or statement and disbelief of the same; and others think that if they cannot point out the fallacy in an argument, that argument must necessarily be correct, and its conclusion logical. We would have such people visit our courts of law; not to learn the petty quibbling and playing upon words in the pro and con argument, but to see the state of mind we refer to exemplified; namely, the SUSPENSION OF JUDGMENT until the evidence be perfect. It would at first sight seem that such a decided state of mind upon all topics is a sign of acumen and considerable mental calibre; but this is not really the case. It is the result of absolute laziness, for it is much more easy to decide than to judge or discriminate; the one is merely affirming a conviction, the other is collecting the evidence for that conviction; the one is asserting a principle, the other is tracing the development; the one is talk, the other is work. But men prefer, for the most part, revelation to induction; they are not satisfied, so to speak, with Moses and the Prophets, but wish one to rise from the dead. It of course saves a great deal of trouble, and of that style of work to which they are not accustomed. Now the ready-made sciences—THE PSEUDO-SCIENCES, such as mesmerism, phrenology, homœopathy, electro-biology, and hydropathy—appeal one and all to these qualities of mind. We do not wish to be uncharitable; but look at the followers of these delusions. Some of them, innocent enough, amuse themselves most harmlessly. Some cure a sore throat in two hours by the decillionth grain of nothing; others bless the days they live in when they can hear of the Winking Virgin of Rimini; others hire their servants by the development of the cranium; others devote themselves to the production of "sweet slumber" by mysterious motions of their arms, hands, fingers, and eyes, while others, most harmless of all, torture themselves with heat and cold in the vain hope of a coming crisis. Enjoy your pleasing delusions for a time, illustrious *pseudo-learned men.*

(To be continued.)

IRRITABILITY AND ACTION OF THE HEART.

(Concluded from page 226.)

ALTHOUGH the ancients knew how irritable the heart was, although they often opened living creatures, and saw the heart struggling to relieve itself, because it was oppressed with blood, yet they continued entirely ignorant of the cause; and why the heart should alternately contract and relax without stop or interruption, seemed to them the most inexplicable thing in nature. Hippocrates ascribed it to the innate fire that is in the heart; Sylvius said, that the old and alkaline blood in the heart mixing with the new and acid chyle, and with the pancreatic lymph, produced a ferment there; Swammerdam, Pitcairn and Friend, thought that the heart, and every muscle which had no antagonist muscle, was moved by a less proportion of the vital spirit than other muscles required. Others believed that each contraction of a muscle compressed the nerves of that muscle, and each relaxation relieved it; and that this alternate compression and relief of the nerve were the cause of the alternate movements of the heart; another physician of our own country, a great mechanic, and a profound scholar in mathematics, and all those parts of science which have nothing to do with the philosophy of the human body, refined upon this theory most elegantly; for, observing that the nerves of the heart turned round the aorta, and passed down betwixt it and the pulmonic artery, he explained the matter thus: "These great

arteries, every time they are full, will compress the nerves of the heart, and so stop this nervous fluid, and every time they are emptied" (a thing which he chose to take for granted, for in truth they never are emptied) "they must leave the nerves free, and let the nervous fluid pass down to move the heart."

Descartes, who studied everything like a right philosopher of the old breed, viz., by conjecture alone, supposed that a small quantity of blood remained in the ventricle after each stroke of the heart; which drop of blood fermented, became a sort of leaven, and operated upon the next blood that came into the heart, "like vitriol upon tartar;" so that every successive drop of blood which fell into the ventricle swelled and puffed up so suddenly as to distend the heart, and then burst out by the aorta. Philosophers have been so bewitched with the desire of explaining the phenomena of the human body, but without diligence enough to study its structure, that from Aristotle to Buffon, it is all the same—great ignorance and great presumption. But on this subject of the pulse of the heart, physicians almost surpassed the philosophers in the absurdity of their theories, till at last they were reduced to the sad dilemma of either giving up speaking upon this favourite subject, or of contenting themselves with saying, "that the heart beat by its facultas pulsifica, its pulsative faculty."

The ancients, I have said, often opened living creatures, and saw the heart struggling to relieve itself because it was oppressed with blood: this blood is itself the stimulus which moves the whole; for, important as this function is, it is equally simple with all the others: and as urine is the stimulus to the bladder, food an excitement to the intestines, and the full-grown fœtus a stimulus to the womb; so is blood the true stimulus to the heart. When the blood rushes into the heart, the heart is excited and acts; when it has expelled that blood, it lies quiescent for a time; when blood rushes in anew, it is roused again: so natural are both the incessant action and regular alternation of contraction and relaxation in the heart.

It is when we are so cruel as to open a living creature that we see best both the operation of the blood as a stimulus, and the manner in which the heart reacts upon it. When we tie the two venæ cavæ so as to prevent the blood from arriving at the heart, the heart stops; when we slacken our ligatures and let in the blood, it moves again; when we tie the aorta, the left ventricle being full of blood will continue struggling, bending, turning up its apex, and contracting incessantly and strongly, and will continue this struggle long after the other parts have lost their powers. One author, whether from his awkwardness, or the delicacy of the subject, or really from the strength of the ventricle, assures us, that often while he has held the aorta of a frog close with pincers, it has burst by the mere force of the heart. If, after violent struggles of this kind, you cut the aorta, even of so small a creature as an eel, it will throw its blood to the distance of three or four inches.

Thus we not only know that we can excite the heart by accumulating blood in it, but that by confining the blood in it we can carry that excitement to a very high degree; and, in short, by keeping the one or the other ventricle incessantly full of blood, we can make the one heart work continually, while the other lies quiet, or is only slightly drawn by the other's motion, showing the true distinction betwixt the heart of the body and the heart of the lungs. And this is a memorable fact, that it is not merely the stimulus of the blood, but the sense of fulness that makes the heart contract; for the auricle often beats twice or thrice, sometimes it makes its push four or five times, before it can force the ventricle to contract.

When we empty the heart, and tie all its veins, all its parts cease to act; stimuli applied outwardly makes it contract partially; it trembles in particular fibres: but it is only letting in the blood, or blowing it up with air, that can bring it into full action again. When we look with cruel deliberation upon the strokes of the heart in any living creature, we observe that at first, during the full and rapid action of the heart, there is hardly any perceptible interval among the several parts; but towards the end of each experiment, when the pulse flags, and the

creature falls low, the swelling of the great veins, and the successive strokes of auricle and ventricle, are distinctly told. The dilatation and contraction of each part are what we cannot observe, they are so quick; but these things we distinctly observe—the auricle contracts and dilates the ventricle; the ventricle contracts, subsides, and fills the aorta; the aorta turns and twists with the force of the blood driven into it, and by its own re-action, and the ventricle, every time that it contracts, assumes a form slightly curved, the point turning up like a tongue towards the basis, and the basis in some degree bending towards the point. The basis, indeed, is in some degree fixed to the diaphragm and spine, but the heart in its contraction always moves upon its basis as upon a centre; its ventricles, and especially its apex, are free; the point rises and curves so as to strike against the ribs; and the dilatation of the heart is such (together with the posture and relation of its several parts), that during the dilatation the heart turns upon its axis one way; the contraction of the heart reverses this, and makes it turn the other way, so that it seems to work perpetually with the turning motions of a screw. All this is most striking, while we are looking upon the motion of the heart in a living creature.

FURUNCULUS, OR BOIL.

Character.—A hard, circumscribed, exquisitely painful phlegmonous tumour, generally appearing under the figure of a cone, the base of which is considerably below the surface of the surrounding skin. Upon the most prominent part of the boil, there is commonly a whitish or livid pustule, extremely sensible to the touch, and immediately beneath this is the seat of the abscess. The matter is generally slow in forming, and is seldom found to exist in considerable quantity. Its seat is the cellular membrane of any part of the body; its size seldom exceeds that of a pigeon's egg.

Treatment.—Suppuration should be promoted by cataplasms, fomentations, the long exposure of the part to the vapour of hot water; by stimulant plasters, &c. Where there is a disposition in the body to the formation of boils, tonics and sea-bathing have been found serviceable.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjuncton with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

THE ENAMEL OF THE TEETH.

The surface of a tooth, that which appears above the gum, is covered with a very dense hard layer of matter, which has been called the enamel. In this term there is some degree of impropriety, as assimilating an animal production with a vitreous substance, although the enamel very widely differs from the glassy fracture when broken. This matter bestows the most essential quality of hardness on the teeth; and when the enamel is broken off, and the body of the tooth exposed, the bony part quickly decays.

The enamel is the hardest production of the animal body; it strikes fire with steel. In churchyard skulls it is observed to remain undecayed when the centre of the tooth has fallen into dust. It has been found that the component parts of the enamel are nearly the same with those of

bone. In bone, the phosphate of lime is deposited on the membranes, or cartilage, but this hardening matter of bones is a secretion from the vessels of the part, and is accumulated around the vessels themselves: it is still within the control of their action, and is suffering that succession of changes peculiar to a living part. In the enamel, the phosphate of lime has been deposited in union with a portion of animal gluten, and has no vascularity, nor does it suffer any change from the influence of the living system. Although the hardening matter be principally phosphate of lime, a small proportion of the carbonate of lime enters into the composition both of bone and of enamel. But in enamel, according to Morichini and Gay Lussac, there is fluate of lime, to which ingredient these chemists attribute the hardness of this crust.

Although we call the earthy deposit the hardening matter, yet it is the union of the glutinous matter which bestows the extreme hardness; for, when the tooth is as yet within the jaw, and in an early stage of its formation, the deposition is soft, and its surface rough; but, by a change of action in the secreting surface which throws out this fluid, the first deposition is penetrated with a secretion, which either by this penetration simply, or by causing a new apposition of its parts (its structure indeed looks like crystallisation) bestows the density and extreme hardness on the crust or enamel.

When an animal is fed with madder, the colouring matter coming, in the course of the circulation, in contact with the earth of bone, is attracted by it, and is deposited upon it in a beautiful red colour. This colouring matter penetrates more than injection can be made to do in the dead body; and, as by this process of feeding, the enamel is not tinged, we have a convincing proof that the vascular system has no operation on the enamel after it is formed.

In the marmot, beaver, and squirrel, the enamel is of a nut-brown colour, on the anterior surface of the incisor teeth. The molares of some of the cloven-hoofed animals are covered with a black vitreous matter, and sometimes they have a crust of a shining substance like bronze. In the grinding teeth of the graminivorous animals, the arrangement of the enamel is quite peculiar.

From the composition of the enamel, we must be aware of the bad effect of acidulated washes and powders to the teeth: they dissolve the surface, and give a deceitful whiteness to the teeth; they erode the surface, which it is not in the constitution of the part to restore.

THE FIVE VARIETIES OF THE HUMAN SPECIES.

After taking into consideration the principal circumstances which characteri s the several races of man, and arriving—by the proof that all such distinctions are produced in a still greater degree among animals, chiefly of the domesticated kinds, from the ordinary sources of degeneration—at the conclusion that there is only one species, it remains to be inquired how many varieties ought to be recognised in this species, and to enumerate the characters by which they may be distinguished. As there is no circumstance, whether of corporeal structure or of mental endowment, which does not pass by imperceivable gradations into the opposite character, rendering all those distinctions merely relative, and reducing them to differences in degree, it is obvious that any arrangement of human varieties must be in great measure arbitrary. Our imperfect knowledge of several tribes constitutes another very serious difficulty. A complete and accurate arrangement cannot therefore be expected at present; and it is more advisable to adopt a general one, which may answer the purposes of classifying the facts already known, and affording points of comparison in aid of future inquiry, than to attempt the details and minuter distinctions, for which we must depend on further investigation.

It is as well to follow the distribution proposed by Blumenbach, although it is not free from objection; and although the five varieties, under which he has arranged the several tribes of our species, ought rather to be regarded as principal divisions, each of them including several varieties.

This acute and judicious naturalist divides the single species, which the genus *Homo* contains, into the Caucasian, Mongolian, Ethiopian, American, and

Malay varieties. He regards the Caucasian as the primitive stock. It deviates into two extremes most remote and different from each other; namely, the Mongolian on one side, and the Ethiopian on the other. The two other varieties hold the middle places between the Caucasian and the two extremes; that is, the American comes in between the Caucasian and Mongolian; and the Malay between the Caucasian and Ethiopian.

The following marks and descriptions will serve to define the varieties. But it is necessary to observe, in the first place, that on account of the multifarious diversity and gradation of characters, one or two are not sufficient for determining the race; consequently, that an enumeration of several is required: and, secondly, that even this combination of characters is subject to numerous exceptions in each variety. The migrations of the several races in quest of more eligible abodes, the changes of situation consequent on invasion, war, and conquest, and the intermarriages to which these lead, account for much of this uncertainty. Thus the Mongolian and Caucasian varieties have been much intermixed in Asia; the latter, and the Ethiopian, in Africa.

I. Caucasian Variety.—*Characters.* A white skin, either with a fair-rosy tint, or inclining to brown; red cheeks; hair black, or of the various lighter colours, copious, soft, and generally more or less curled or waving, irides dark in those with brown skin, light (blue, gray, or greenish) in the fair or rosy-complexioned. Large cranium, with small face; the upper and anterior regions of the former particularly developed; and the latter falling perpendicularly under them. Face oval and straight, with features distinct from each other; expanded forehead, narrow and rather aquiline nose, and small mouth; front teeth of both jaws perpendicular; lips, particularly the lower, gently turned out; chin full and rounded. Moral feelings and intellectual powers most energetic, and susceptible of the highest development and culture.

It includes all the ancient and modern Europeans, except the Laplanders and the rest of the Finnish race; the former and present inhabitants of Western Asia, as far as the river Ob, the Caspian Sea, and the Ganges; that is, the Assyrians, Medes, and Chaldeans; the Sarmatians, Scythians, and Parthians; the Philistines, Phœnicians, Jews, and the inhabitants of Syria generally; the Tartars, properly so called; the several tribes actually occupying the chain of Caucasus; the Georgians, Circassians, Mingrelians, Armenians; the Turks, Persians, Arabians, Afghauns, and Hindoos of high caste; the northern Africans, including not only those north of the Great Desert, but even some tribes placed in more southern regions; the Egyptians, Abyssinians, and Gaunches.

When these numerous races are assigned to one variety, their assemblage will not be understood to indicate that they are all alike in physical and moral traits. The distribution of our species into five divisions must be regarded in a very general view; and this general conformity is not inconsistent with various and strongly marked modifications. The latter are more numerous in the Caucasian than in the other varieties; perhaps from greater natural softness, delicacy, or flexibility of organisation, concurrring with the influence of more ancient and complete civilisation. In surveying the distinctions of moral and intellectual endowments, we feel uncertain how much ought to be ascribed to original difference, and how much to the powerful influence of government, education, religion, and other analogous causes. I think, however, it will appear, that most of the virtues and talents which adorn and ennoble man, have existed from early times, in a higher degree, among the Celtic and German, than among the Slavonic and Oriental people; while the latter have usually displayed a more sensual character than the former.

Blumenbach is inclined to believe that the primitive form of the human race was that which belongs to the Caucasian variety, of which the most beautiful specimens are now exhibited by the Georgians, Turks, Greeks, and some Europeans. From the finely formed skull of this race, as from a primitive configuration, the other forms descend, by an easy and simple gradation, on the one hand to the Mongolian, and on the other to the Ethiopian variety. The greatest mental powers have been bestowed on this variety; so

that they have discovered nearly all the arts and sciences; indeed, almost our whole treasure of literature and knowledge has been derived from the same quarter. These nations have the most intelligent and expressive countenance, and the most beautiful bodily proportions. They occupy the middle regions of the globe, while the extremities are filled by others. The most ancient and most early civilised nations have belonged to this division; to which, also, according to the observation of Blumenbach, there is a disposition to return in the other races, as may be observed in the South-Sea Islands, and in some parts of Africa; while this does not easily deviate into the dark-coloured varieties.

If we admit the Caucasian to have been the primitive form of man, are we to suppose that the skin was rosy, the hair yellow or red, and the eyes blue, or that the former had a tendency to brown, and that both the latter were dark? We can have little hesitation in adopting the latter opinion; for those characters belong to all of this race, except the Germans, who have occupied only the more distant regions.

In support of the opinion, that the original stock of the human species had the characters of the Caucasian variety, it may be stated, that the part of Asia which seems to have been the cradle of the race, has always been, and still is, inhabited by tribes of that formation; and that the inhabitants of Europe, in great part, may be traced back for their origin to the west of Asia. I think, however, that we have not the data necessary for establishing a satisfactory conclusion on this point. We cannot yet assume it as a point fully proved, that all the varieties of man have been produced from one and the same breed.

II. The Mongolian Variety is characterised by olive colour, which in many cases is very light, and black eyes; black, straight, strong and thin hair; little or no beard; head of a square form, with small and low forehead; broad and flattened face, with the features running together; the glabella flat and very broad; nose small and flat; rounded cheeks projecting externally; narrow and linear aperture of the eyelids; eyes placed very obliquely; slight projection of the chin; large ears; thick lips. The stature, particularly in the countries near the North Pole, is inferior to that of Europeans.

It includes the numerous, more or less rude, and in great part nomadic, tribes, who occupy central and northern Asia; as the Mongols, Calmucks, and Burats, the Mantchoos or Mandshurs, Daourians, Tungooses, and Coreans; the Samoiedes, Yukagris, Coriaks, Tschutski, and Kamtschadales; the Chinese and Japanese; the inhabitants of Thibet and Bootan; those of Tungquin, Cochin China, Ava, Pegu, Cambodia, Laos, and Siam; the Finnish races of northern Europe, as the Laplanders; and the tribes of Esquimaux extending over the northern parts of America, from Behring's Straits to the extremity of Greenland.

"The Calmucks, and all the Mongolian tribes," says Pallas, "are characterised by obliquity of the eyes, which are depressed towards the nose, and by the rounded internal angle of the eyelids; by thin, black, and scarcely curved eyebrows; by the nose, which is altogether small and flat, being particularly broad towards the forehead; by high cheek-bones; a round head and face. Black-brown irides, large and thick lips, short chin, white teeth, remaining firm and sound even in advanced age, and large ears standing off from the head, are universal."—"They are of middling size, and we see very few tall people amongst them: the women are particularly small, and very delicately formed."

That the characters of the ancient Huns corresponded to this description, may be collected from the short but expressive portrait which Jornandes has drawn of Attila: "Betraying his origin by the national characteristics of short stature, broad chest, large head, small eyes, scanty beard, scattered, gray locks, flat nose, and hideous complexion."

Mr. Barrow says, that "the Mantchoo Tatars are scarcely distinguishable from the Chinese by external appearances: the Chinese are rather taller, and of a more slender and delicate frame, than the Tatars, who are in general short, thick, and robust. The small eye, elliptical at the end next the nose, is a predominating feature in the cast of both the Chinese and Tatar countenance, and they

have the same high cheek-bones and pointed chins. The native colour both of Chinese and Tatars seems to be that tint between a fair and a dark complexion, which we distinguish by the word brunet or brunette; and the shades of this complexion are deeper or lighter, according as they have been more or less exposed to the influence of climate. The women of the lower class, who labour in the fields, or who dwell in vessels, are almost invariably coarse, ill-featured, and of a deep-brown complexion, like that of the Hottentots. We saw women in China, though very few, who might pass for beauties even in Europe. A small black or dark-brown eye, a short rounded nose, generally a little flattened, lips considerably thicker than in Europeans, and black hair, are universal."

(To be continued.)

A VOCABULARY OF CHEMICAL TERMS.

(Continued from page 228.)

Hydrometers.—Instruments for ascertaining the specific gravity of sprituous liquors or other fluids.

Hygrometers.—Instruments for ascertaining the degree of moisture in atmospheric air.

Hygroscope.—This term is sometimes considered synonymous with hygrometer, but the instruments are different.

Hyperoxygenised.—A term applied to substances which are combined with the largest possible quantity of oxygen.

Incineration.—The burning of vegetables for the sake of their ashes.

Inflammation.—A phenomenon which takes place on mixing certain substances. The mixture of oil of turpentine with strong nitrous acid is an instance of this peculiar chemical effect.

Infusion.—A simple operation to procure the salts, juices and other virtues of vegetables by means of water.

Insolation.—A term sometimes made use of to denote that exposure to the sun which is made, in order to promote the chemical action of one substance upon another.

Intermediates.—A term made use of when speaking of chemical affinity. Oil, for example, has no affinity to water unless it be previously combined with an alkali; it then becomes soap, and the alkali is said to be the intermedium which occasions the union.

Iodides.—Compounds formed by the union of any substance with iodine.

Ittrium.—The undecomposable base of the earth called yttria.

Kali.—A genus of marine plants, which are burnt to procure mineral alkali by lixiviating the ashes.

Laboratory.—A room fitted up with apparatus for the performance of chemical operations.

Lactates.—Salts formed by the combination of any base with lactic acid.

Lakes.—Certain colours made by combining the colouring matter of cochineal, or of certain vegetables, with pure alumina, or with oxide of tin, zinc, &c.

Lamp, Argand's.—A kind of lamp much used for chemical experiments. It is made on the principle of a wind furnace, and thus produces a great degree of light and heat without smoke.

Lens.—A glass, convex on both sides, for concentrating the rays of the sun. It is employed by chemists in fusing refractory substances which cannot be operated upon by an ordinary degree of heat.

Levigation.—The grinding down of hard substances to an impalpable powder on a stone with a muller, or in a mill adapted to the purpose.

Liquefaction.—The change of a solid to the state of a fluid, occasioned by the combination of caloric.

Litharge.—An oxide of lead which appears in a state of vitrification. It is formed in the process of separating silver from lead.

Lixiviation.—The solution of an alkali or a salt, in water, or in some other fluid, in order to form a lixivium.

Lixivium.—A fluid impregnated with an alkali or with a salt.

Lute.—A composition for closing the junctures of chemical vessels to prevent the escape of gas or vapour in distillation.

Maceration.—The steeping of a solid body in a fluid in order to soften it, without impregnating the fluid.

Magnesium.—The undecomposable base of magnesia.

Malates.—Salts formed by the combination of any base with malic acid.

Malleability.—That property of metals which gives them the capacity of being extended and flattened by hammering. It is probably occasioned by latent caloric.

Martial.—An old term for chemical preparations of iron.

Massicot.—A name given to the yellow oxide of lead, as minium is applied to the red oxide.

Matrass.—Another name for a bolt-head.

Matrix.—The bed in which a metallic ore is found.

Matt.—That mass of metal which separates from the scoriæ in smelting ores without previous roasting.

Menstruum.—The fluid in which a solid body is dissolved. Thus water is a menstruum for salts, gums, &c., and spirit of wine for resins.

Metallic oxides.—Metals combined with oxygen.

Metallurgy.—The art of extracting and purifying metals.

Mineral.—Any natural substance of a metallic, earthy or saline nature, whether simple or compound, is deemed a mineral.

Mineralisers.—Those substances which are combined with metals in their ores; such are sulphur, arsenic, oxygen, carbonic acid, &c.

Mineralogy.—The science of fossils and minerals.

Mineral waters.—Waters which hold some metal, earth or salt, in solution. They are frequently termed medicinal waters.

Minium.—The red oxide of lead, commonly called red lead.

Molecule.—The molecules of bodies are those ultimate particles of matter which cannot be decomposed by any chemical means.

Molybdates.—Salts formed by the combination of any base with the molybdic acid.

Mordants.—Substances which have a chemical affinity for particular colours; they are employed by dyers as a bond to unite the colour with the cloth intended to be dyed. Alum is of this class.

Mother-waters.—The liquors which are left after the crytallisation of any salts.

Mucilage.—A glutinous matter obtained from vegetables, transparent and tasteless, soluble in water, but not in spirit of wine. It chiefly consists of carbon and hydrogen, with a little oxygen.

Mucites.—Salts formed by the combination of any base with the mucous acid.

Muffle.—A semicylindrical utensil, resembling the tilt of a boat, made of baked clay; its use is that of a cover to cupels in the assay furnace, to prevent the charcoal from falling upon the metal, or whatever is the subject of experiment.

Muriates.—Salts formed by the combination of any base with muriatic acid.

Natron.—One of the names for mineral alkali or soda.

Neutralise.—When two or more substances mutually disguise each other's properties, they are said to neutralise one another.

Neutral salt.—A substance formed by the union of an acid with an alkali, an earth, or a metallic oxide, in such proportions as to saturate both the base and the acid.

Nitrates.—Salts formed by the combination of any base with nitric acid.

Nitrogen.—A simple substance, by the French chemists called azote. It enters into a variety of compounds, and forms more than three parts in four of atmospheric air.

Ochres.—Various combinations of the earths with oxide or carbonate of iron.

Oil.—A fluid substance well known. It is composed of hydrogen, oxygen and carbon.

Ores.—Metallic earths, which frequently contain several extraneous matters; such as sulphur, arsenic, &c.

Oxalates.—Salts formed by the combination of any base with oxalic acid.

Oxide.—Any substance combined with oxygen, in a proportion not sufficient to produce acidity.

Oxidise.—To combine oxygen with a body without producing acidity.

Oxidisement.—The operation by which any substance is combined with oxygen, in a degree not sufficient to produce acidity.

Oxygen.—A simple substance composing the greatest part of water, and part of atmospheric air.

Oxygen gas.—Oxygen converted to a

gaseous state by caloric. It is also called vital air. It forms nearly one-fourth of atmospheric air.

Oxygenisable.—A term applicable to all bodies that combine with oxygen, and do not emit flame during the combination.

Oxygenise.—To acidify a substance by oxygen.

Oxygenisement.—The production of acidity by oxygen.

Parting.—The operation of separating gold from silver by means of nitrous acid and other mediums.

Pelican.—A glass alembic, with a tubulated capital, from which two opposite and crooked arms pass out, and enter again at the swell of the vessel. The instrument is designed for operations of cohobation, and is calculated to save the trouble of frequently luting and unluting the apparatus. It is now seldom used.

Pellicle.—A thin skin which forms on the surface of saline solutions and other liquors, when boiled down to a certain strength.

Phlogiston.—An old chemical name for an imaginary substance, supposed to be a combination of fire with some other matter, and a constituent part of all inflammable bodies and of many other substances.

Phosphates.—Salts formed by the combination of any base with phosphoric acid.

(To be continued.)

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MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 37.

ON LIGHT, HEAT, AND ELECTRICITY, AS CONNECTED WITH LIFE.

No organised fabric, however perfect in its structure and composition, and however amply supplied with the materials requisite for its growth and maintenance, can perform a single vital action without the concurrence of certain other agencies of the class commonly termed physical forces. These afford the *stimulus* or provocative to activity; and the germ could no more develop itself into a cell without the operation of one (at least) of them than it could do so with their assistance, but without the supply of the elementary materials. Hence, these agents—light, heat, and electricity—when viewed with reference to their participation in the phenomena of life, have been termed *vital stimuli*. Their operation upon organised structures is not altogether without analogy to the influence they possess over inorganic matter, which is exerted in the production of chemical phenomena; thus the union between two substances which previously showed no tendency to combine, although in close contact with each other, may be frequently caused to take place, with various manifestations of energy, by the momentary influence of one of these agents. When chlorine and hydrogen are mingled together in a bottle, and this is placed in darkness, they may be kept for any length of time without change; but the agency of *light* brings their previously dormant affinities into a state of activity; for if they be subjected to the direct rays of the sun, an instantaneous explosion takes place with production of hydrochloric acid, while if exposed for some time to diffused daylight, they unite more slowly. The same effect may be produced by *heat*, for an union of the two gases occurs, with a violent explosion, when any substance heated to a *white* heat is introduced into the mixture.

And a like result is produced by *electricity:* the transmission of a spark through the mixture producing an explosion with a generation of hydrochloric acid. In neither of these cases can we consider that heat was excluded; for, although a high temperature was required to bring about the union when no other agent was in operation, yet neither light nor electricity could have effected the union, unless the elements had been in the gaseous condition which they present at all ordinary temperatures, in virtue of the latent heat which they contain.

In like manner we shall find, that of these three agents, *heat* is the one which is most *universally* concerned in the production of vital phenomena. The action of *light* is indispensable for certain purposes, and we shall see that upon it essentially depends the first production of organic compounds; but it would possess no efficacy whatever without the simultaneous operation of heat; and a very large proportion of the vital operations of animals have but very little dependence upon it. Of the operation of *electricity* we have little certain knowledge, although there is reason to believe that it occasionally exerts an important influence. In regard to all these *vital stimuli* it may be observed, that the dependence of the vital

actions of a being upon their constant influence varies with its degree of organisation, so that beings of simple organisation are capable of enduring a deprivation of these stimuli, which would be fatal to those higher in the scale. This will be partly understood when it is borne in mind that the higher the development of the living being, the more complete is the distribution of its different actions amongst separate organs — the more close, therefore, is their mutual dependence—and the more readily, in consequence, are they all brought to a close by the interruption of any one. But there is no doubt that the actions of even the individual parts of the higher beings require for their excitement a greater supply of these stimuli than the similar actions of the corresponding parts in the lower, whilst if these stimuli be exerted upon the lower with the intensity that is required for the higher, they destroy the vital properties of the tissues altogether by the excess of their action. This distinction is most obvious in regard to the relative influence of heat upon warm-blooded and cold-blooded animals.

It is a very curious fact, that, whilst the lower classes of living beings are more capable than the higher of bearing the deprivation of these vital stimuli, they are, at the same time, more liable to alterations in their own structure and development in consequence of variations in the degree of the agency of these or of other causes external to themselves. Thus the forms of the lower tribes of plants and animals are liable to be greatly affected by the conditions under which they grow, and these also modify their degree of development. It seems as if the formative power were less vigorous in the lower than in the higher classes; so that the mood in which it manifests itself in the former is more dependant upon external influences, whilst in the latter it either predominates over them, causing the regular actions to be performed, or gives way altogether.

The same principle applies to the early condition of the higher beings; their embryoes, like those beings of permanently low type, which they resemble in their degree of development, being liable to be affected by modifying causes, which the perfect beings of the same kind are able to resist. When the being has so far advanced in its development that its several parts have assumed different characters, the influence of the vital stimuli upon its development becomes more restricted. A remarkable example of this will be given presently in regard to light.

ON THE PSEUDO-SCIENCES.

(*Continued from page* 232.)

10. *Errors arising from the system of discipleship.*—There are two classes of society—the leaders and the led. They are, necessarily, disproportioned in numbers, the led proving by far the majority. This, after all, is less from the absence of capacity among the led than presence of boldness, activity, and industry among the leaders. Many are leaders not because they possess higher mental qualifications than their fellows, but because the minds in the circles in which they move are sluggish and inactive, and prefer being *thought for* to thinking, or, rather *prefer* nothing at all.

There is a moral view of this and the following consideration (12) which cannot be too forcibly impressed upon the mind; that is, our accountability for opinions on these subjects, if not to a higher power, which we believe, in common justice to our fellow men. There is a sense in which a man has no right to enjoy his own opinion; that is, when he forms it without a proper reason for his conviction, but merely as a whim or fancy, as it must invariably be when he follows a leader, simply because he will not seek a path for himself.

As an instance of the errors arising from discipleship, look at the delusions of mesmerism. Who among medical men in this country and in these times would have believed in mesmerism as it is now defined, had they not had a leader, who, at the period of this heresy, was assuredly one of the most popular physicians of the day! It was then, and has been since, on this subject, "follow the leader!" and now mesmeric doctors are as common as if they had any ground for belief in their particular views. Homœopathy and hydropathy have had leaders of another kind — money and

interest—while in most cases they have had a propulsive ejectment from legitimate medicine—a lack both of patience and *patients*. It matters not what the leader may be—money, fashion, names, men, or systems; let them take the lead, and as long as men do not investigate for themselves with a conscientious regard for truth and an acknowledgment of the fact that they are responsible for their opinions, the system of discipleship will be a never-failing source of error.

(To be continued.)

THE DOCTOR WATTERS' GANG.

Among all the villanies (and truly "their name is legion") that have been consummated upon society, those of the atrocious Watters' gang stand preeminent. We subjoin the final examination and commitment of the miscreants for the perusal of our readers; and when they have read the account, they will unquestionably agree with us in feelings of unmitigated abhorrence.

Among all the subjects to which medical men have devoted their attention, there is not one more open to quackery and pretensious science than DISEASES OF THE EAR; nor has there been one more ignorantly practised upon by scoundrels and presumptuous ignorance. The parties who have brought about and followed up the miscreants to their conviction deserve the grateful thanks of society at large. We also trust that this example will be a warning to certain parties resident in the metropolis, whom we could name, whose deeds deserve as much to be punished as those of the gang above alluded to.

Final Examination and Commitment of the Prisoners.—John Nicholl Watters, *alias* Dr. Watters, *alias* Dr. Locock, and Claude Edwards, were placed at the bar before the Hon. G. C. Norton, for final examination on a charge of conspiring, with others not in custody, in defrauding a number of persons, under the pretence of curing them of deafness and other infirmities under which they laboured.

Mr. Lewis, jun., attended for the prosecution, and Mr. Neale appeared for the prisoner Watters.

Mr. Lewis said, that, from the inquiries that had been instituted, it had been ascertained that the prisoner Watters had, as far back as about the year 1833, pleaded Guilty to a charge of arson, and was sentenced to eighteen months' imprisonment; and subsequent to that had been tried, convicted, and sentenced to three years' imprisonment for personating other persons at the Surgeons' Hall. His worship would be also told by a witness whom he should call, that the prisoner had a second fire of a very suspicious character, but no prosecution took place.

Mr. Norton.—Have you learned anything of the character of the prisoner Edwards?

Mr. Lewis.—Well, Sir, his story is, that he had been brought up as a chemist, but had, unfortunately for himself, fallen in with the prisoner Watters and the Bennetts, and I do not think I can better illustrate his character since that period than by reading over the published transcript of the notes taken by a short-hand writer on a trial at the Old Bailey, in April last.

Mr. Norton.—What case was that?

Mr. Lewis.—The trial of an indictment preferred by Stowell, the informer, against a Mr. Haynes and others, for conspiring with the Bennetts to obtain money, and which indictment had been preferred without any previous inquiry. On that trial the prisoner Edwards was called as a witness, and said:—"I live at 28, North-street, Limehouse. I was in the employment of Messrs. Bennett Brothers, of 32, Spring-gardens. They carried on the business of chemists. I know the defendant Haynes. I have seen him frequently at 32, Spring-gardens. I was assistant to compound the medicine, and gave it to the patients. I know the composition of the medicine perfectly well. There were five compositions—ear drops, embrocation, injection, fumigation, and tincture. This bottle contains the embrocation, and this the injection. This is urine; they are all the same, differently coloured. The fumigation has no oil in it; the others have oil. This one is train oil, what they call cabbage oil, and urine. This red mixture is a solution of cochineal and urine; the urine extracts the colour from the cochineal. This one is drops for the ear. Two or three of these went together, and they were charged from one shilling

to £2, £3, and £4: it depended on the patients. We had a great many patients, I should think 20 or 30 a-day. I kept the books and made entries. I have not the books with me. The profit was at least £2,000 for each of the two brothers Bennett." Your worship has in this testimony a tolerable specimen of the prisoner Edwards, who, according to his own account, had been in the habit of making up such abominable filth, and disposing of it to his afflicted but unfortunate dupes. I shall now call before you a witness or two, who will connect the prisoners more particularly with the Spring-gardens establishment, and a medical gentleman to speak to the character of the medicine supplied, and its probable effects on the patients; and having done this, I shall call upon your worship to commit the prisoners to take their trial on the charge of conspiring together to obtain money from the different witnesses by gross fraud.

The first witness called was

Mr. Joshua Woolrich, of 24, South-street, Grosvenor-square, who deposed, that in consequence of an advertisement which he had seen in one of the morning papers, he called at 32, Spring-gardens, and there observed a plate with the words "British and Foreign Infirmary for the Cure of the Diseases of the Ear and Eye" on the door, and also the name of "Dr. Watters." He was shown into a room by a livery servant, and saw the prisoner Edwards, whom he addressed, saying he came for the cure of deafness, and asked for Dr. Watters. Edwards replied that he was Dr. Watters, commenced examining his ears, and said he was quite confident he could cure him in a fortnight for £2 : 2 or £2 : 3; that it was mere nervousness, and that the remedies were to be applied to the ear. He then left the room for a short time and came back with a large and a small bottle, said he was to use the large one with a syringe to his ears, and the small one was to rub outside the ears. He said the charge was £2 : 5 : 6, and he (witness) paid it. He used the "stuff" as directed, but said that instead of doing him good it made him ill, and in consequence he went the following week, when he again saw Edwards, whom he told he received no benefit, but had suffered great pain by the use of the medicine he gave him. He (Edwards) said the case was worse than he at first thought it to be, and he required a further sum of £2 : 10 for a vapour-bath, which would cure him, and produced the lamp and tube he here produced. The witness here exhibited a small instrument, which stood about five inches high, which resembled a small lamp with a small tube on the top like a blow-pipe; and its appearance created much laughter. The prisoner, he said, on giving him this instrument, told him he was to purchase some tincture of myrrh, soak it in some wool, burn it in the lamp, and while it was so burning to place the end of the tube into his ear, so that the vapour might pass in. He paid him the £2 : 10, and received the receipt produced from Edwards in his own handwriting, but which he signed "Jno. W. Watters." The witness used the vapour-bath, and in doing so suffered excruciating pain in the head, and after applying it for seven or eight times became so ill that he was obliged to keep his bed. On the following week he went again to Spring-gardens, and saw a young man, who said he was the brother of Dr. Watters, that Dr. Watters was not at home, and that he (witness) was to keep on the same remedies until the following week. He did so, and on the following week called again, when he saw the prisoner Watters, who represented himself to be merely a friend of the doctor's, and always attended his patients in his absence. Witness told him he had been under his treatment for three weeks, and received no benefit; but, on the contrary, had suffered great pain. The prisoner replied, "He had no doubt he should cure him in a short time; that he did not think he (witness) had been treated properly by Dr. Watters, but that he should attend to him himself, and had no doubt of effecting a cure." The prisoner further said, he (witness) required some more medicine, left the room, and he saw no more of him. The young man he (witness) at first saw, came into the room with a bottle of medicine, for which he demanded 17s. 6d., but witness told him he could not pay it. The young man said he could not have it without paying something on account, and he gave him half-a-

crown, promising to give him the remainder when he next came. He subsequently summoned the party to the Westminster County Court to recover his money, as the stuff he received was not of the least use to him, but they never appeared to the summons, and he lost his money.

In cross-examination, he (witness) acknowledged that he had never given any money to the prisoner Watters.

The Chief Clerk here read over the testimony given on a former examination by Mr. E. D. Rogers, the medical analyst, respecting the medicine, or rather that which they called medicine, supplied by the prisoners to their unfortunate patients. That gentleman said—"The three bottles produced were delivered to me in a parcel, sealed up. I have examined the lead-coloured liquid in one of the small bottles. It contains a small quantity of sulphate of zinc and a quantity of compound spirit of lavender, and a little iron deposit, as if some iron oxide had been put in. The medicine was not of the slightest use in deafness, neither the ingredients nor the proportions. The large bottle contains a small quantity of the sulphate of lead, deposited, and zinc in solution, no doubt the result of a mixture of sulphate of zinc and acetate of lead mixed with water; and it is not at all useful in curing deafness. The small bottle contains either rancid olive oil or rape oil, and a little oil of elder, with a little soap, apparently made by the addition of an alkali. That medicine would not cure deafness. I should not like to put it into my ear, it would irritate it."

Mr. Samuel Evans Smith, surgeon to the National Ear Institution, in Pall-mall East, said—I have heard a description of the contents of the bottles that were produced, and, with the exception of the soap, not one of the articles mentioned would be of any service in the case of deafness. Most of the articles mentioned would be injurious, and in some cases highly dangerous, and what I would not use myself on any condition. Acetate of lead, if used by a person the membrane of whose ear was perforated, might prove highly dangerous, and it might go so far as to be fatal.

Further evidence was given of the fact of the prisoner assuming the name of Dr. Locock; after which both were fully committed for trial, and Mr. Norton refused to give any order respecting the £6 or £7 found on them when taken into custody.

At the termination of the case Mr. Norton complimented Mr. Jones, the prosecutor, for his persevering conduct in bringing the prisoners to justice, and told him the public were very much indebted to him for breaking up such gross impostors.

ANATOMY.

(*Continued from page* 222.)

The face is divided into the superior and inferior maxillæ, or upper and lower jaw. The upper jaw is divided into thirteen bones, exclusive of the teeth—two upper jaw, two nose bones, two palate, two eye, two lower (spongy), two tear, and the vomar or plough-share bone.

The lower jaw is formed something like a horse-shoe, and in the upper edge of the jaw are the sockets for the teeth.

The Teeth.—These are hard bones, partly covered with a peculiar substance called enamel, and fixed in the upper and under jaw in such a manner that in the full-grown individual there are sixteen belonging to each. Each tooth is divided into a crown, which is covered by the enamel; a nut, or the part embraced by the gum; and a root, or fang, which last is hidden within the socket.

The teeth are of four kinds, namely, eight incisors or cutting teeth, four in each jaw, placed in the front of the mouth, are flat and sharp-edged, and their roots are simple. The cuspids are four in number, one being placed on each side of the incisors; their fangs are single, and go a considerable way under the jaw, especially the upper ones, which have been called the eye-teeth, under the supposition that the fangs reached the eyes. The ends are pointed, and their bodies rounded. The bicuspids are eight, two on each side, of the cuspids. The molars, or grinders are twelve, three situate at the extremities of each jaw; their fangs are varied, those of the under jaw having two and the upper three. The first set of teeth consists of twenty.

Bones of the Trunk.—The trunk is formed of the spine (back-bone), the thorax (chest) and the pelvis (basin), the

first of which is made up of twenty-four bones called vertebræ, to which are added the sacral bone (sacred) and os coccygis (from coxa, the hip). The vertebræ are divided into cervical (neck), which are seven; into dorsal (back), which are twelve; and into lumbar (loin), which are five in number. The first vertebra of the neck is called atlas. The bodies of these vertebræ are smaller and of a firmer texture than the other vertebræ. From the middle of the hind part of each vertebra, except the first, stands a short bone or process, as it is called, which is named spinal, and from every one there is a process on each side called transverse; while there are two upper and two under ones that are shorter, which are named the superior (higher) and inferior (lower) oblique processes. The fore part of the seven vertebræ of the neck, and two upper ones of the back, are flat before. The third and fourth of the back are sharp. The spinal processes of the second, third, fourth, and fifth of the neck vertebræ are forked; the two last, long and horizontal, as are the three or four upper ones of the back: the last, however, are a little declining. The middle ones of the dorsal run obliquely downwards, and the processes of the remaining vertebræ become successively thicker, stronger and less declining, those of the loins being horizontal. The transverse processes of the neck vertebræ are pierced for the admission of the blood-vessels of the neck. The eight or nine superior ones of the back receive the upper ribs; and the rest, with those of the loins, serve only for the origin and insertion of the muscles.

The *os sacrum* has two upper oblique processes, some small spinal processes and two foramina (openings) in each interstice of the bones which compose it, both before and behind.

The *os coccygis* is formed of a chain of bones, each piece becoming smaller as it descends: it is convex or bowing behind, and concave or the reverse before, and is triangular in its form.

Through every bone of the spine, the os coccygis excepted, there is a large opening, which, together, make up the long channel for the passage of the spinal cord; and in each space between the vertebræ are two large openings for the passage of the several nerves. The bodies of the vertebræ are all connected by strong ligaments or intervening cartilages. In the neck portion of the long column the oblique processes are wrapped over the receiving bone. It is the same with the back vertebræ.

The vertebræ of the loins are received into deep cavities, and are attached by strong ligaments.

The *ribs* are twelve in number, the seven uppermost being generally called true ribs, their cartilages reaching the breast-bone, and the five lowest are called false. They are articulated or joined to the twelve vertebræ of the back, and all except the two or three last ones are articulated to the transverse processes of the vertebræ. To the fore end of each rib a long, broad, and strong cartilage is fixed, and thence reaches to the sternum, or is joined to the cartilage of the next rib; and in old persons they often become very much hardened.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant

an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

CURE OF A SEVERE INJURY BY SCALDING.

TO MR. CRICK.

DEAR SIR,—We beg to express our sincere gratitude and deep obligation to you for the most important services rendered to us in the very unfortunate circumstances in which we were placed, through our dear child's life being in imminent danger by scalding. We feel assured, that any one seeing her a short time after the accident had occurred (her physical powers entirely prostrated, her right foot, left leg, thigh and seat, nearly the whole of which laid bare, even to rawness) would have despaired (as we did) of her recovery; or if she did, it would be a long and painful process, and then not without some of the essential parts to right action of the system being considerably injured; but to our great satisfaction, in thirteen days under your skilful treatment, we had the pleasure of seeing our child running about with a tolerable degree of vigour; and now, five weeks have not elapsed since the accident took place, yet scarcely a vestige of it is to be seen. We think it a duty due to your merits, as a Medical Botanist, to send to you this humble testimony, with liberty to do with it as you please; and believe us to remain,

Dear Sir, yours very gratefully,

WM. and ELIZTH. PRATT.

Wellington-street, Bedford, June 11th, 1859.

A VOCABULARY OF CHEMICAL TERMS.

(Continued from page 240.)

PHOSPHITES.—Salts formed by the combination of any base with phosphorous acid.

Phosphurets.—Substances formed by an union with phosphorus.

Photometer.—An instrument contrived for measuring the comparative intensity of light.

Plumbago.—Carburet of iron, or the black lead of commerce.

Pneumatic.—Anything relating to the airs and gases.

Pneumatic trough.—A vessel filled in part with water or mercury, for the purpose of collecting gases, so that they may be readily removed from one vessel to another.

Potassium.—The metallic base of the alkali called potash.

Precipitate.—Any matter which, having been dissolved in a fluid, falls to the bottom of the vessel on the addition of some other substance capable of producing a decomposition of the compound, in consequence of its attraction either for the menstruum, or for the matter which was before held in solution.

Precipitation.—That chemical process by which bodies dissolved, mixed, or suspended in a fluid, are separated from that fluid, and made to gravitate to the bottom of the vessel.

Prussiates.—Salts formed by the combination of any base with prussic acid.

Putrefaction.—The last fermentative process of nature, by which organised bodies are decomposed so as to separate their principles, for the purpose of reuniting them, by future attractions, in the production of new compositions.

Pyrites.—An abundant mineral found on the English coasts, and elsewhere. Some are sulphurets of iron, and others sulphurets of copper, with a portion of alumina and silica. The former are worked for the sake of the sulphur, and the latter for sulphur and copper. They are also called marcasites and fire-stone.

Pyrites, martial.—That species of pyrites which contains iron for its basis.

Pyrometer.—An instrument invented by Mr. Wedgwood for ascertaining the degrees of heat in furnaces and intense fires.

Pyrophori.—Compound substances which heat of themselves, and take fire on the admission of atmospheric air.

Pyroscope.—An instrument invented by Leslie for measuring the pulsatory commotion of the air, or the intensity of the heat darting continually from the fire into a room. This instrument will also mark the pulsations from a cold surface.

Quartation.—A term used by refiners in a certain operation of parting.

Quartz.—A name given to a variety of siliceous earths mixed with a small portion of lime or alumina.

Radicals.—A chemical term for the elements of bodies.

Radicals, compound.—When the base of an acid is composed of two or more substances, it is said that the acid is formed of a compound radical. Sulphuric acid is formed with a simple radical; but the vegetable acids, which have radicals composed of hydrogen and carbon, are said to be acids with compound radicals.

Reagents.—Substances which are added to mineral waters or other liquids as tests to discover their nature and composition.

Realgar.—Red sulphureted oxide of arsenic.

Receivers. — Globular glass vessels adapted to retorts for the purposes of preserving and condensing the volatile matter raised in distillation.

Rectification.—This is nothing more than the redistilling a liquid to render it more pure, or more concentrated, by abstracting a part of it only.

Reduction.—The restoration of metallic oxides to their original state of metals; which is usually effected by means of charcoal and fluxes.

Refining.—The process of separating the perfect metals from other metallic substances, by what is called cupellation.

Refractory.—A term applied to earths or metals that are either infusible, or that require an extraordinary degree of heat to change or melt them.

Refrigeratory.—A contrivance of any kind which, by containing cold water, answers the purpose of condensing the vapour or gas that arises in distillation. A worm-tub is a refrigeratory.

Registers.—Openings in chimneys, or other parts of chemical furnaces, with sliding doors, to regulate the quantity of atmospheric air admitted to the fire-place, or to open or shut the communication with the chimney at pleasure.

Regulus.—In its chemical acceptation, signifies a pure metallic substance, freed from all extraneous matters.

Repulsion.—A principle whereby the particles of bodies are prevented from coming into actual contact. It is thought to be owing to caloric, which has been called the repulsive power.

Residuum.—What is left in a pot or retort after the more valuable part has been drawn off. Thus the sulphate of potash which remains in the pot after the distillation of nitrous acid is called the residuum. It is sometimes called the caput mortuum.

Resins.—Vegetable juices concreted by evaporation either spontaneously or by fire. Their characteristic is solubility in alcohol, and not in water. It seems that they owe their solidity chiefly to their union with oxygen.

Retort.—A vessel in the shape of a pear, with its neck bent downwards, used in distillation; the extremity of which neck fits into that of another bottle called a receiver.

Reverberatory.—An oven or furnace in which the flame is confined by a dome, which occasions it to be beat down upon the floor of the furnace before it passes into the chimney. Some are so contrived that it returns or reverberates upon the matter under operation.

Roasting.—A preparative operation in metallurgy to dissipate the sulphur, arsenic, &c., with which a metal may be combined.

Rock-crystal.—Crystallised silica.

Saccholates.—Salts formed by the combination of any base with saccholactic acid.

Sal de Duobus, Sal Polychrest.—Names originally given to the salt which is now called sulphate of potash.

Salifiable bases.—All the metals, alkalies, and earths, which are capable of combining with acids and forming salts, are called salifiable bases.

Saline.—Partaking of the properties of a salt.

Salts, neutral.—A class of substances formed by the combination to saturation of an acid with an alkali, an earth, or other salifiable base.

Salts, triple.—Salts formed by the combination of an acid with two bases or radicals. The tartrate of soda and potash (Rochelle salt) is an instance of this kind of combination.

Sandiver.—A matter composed of different salts, which rises as a pellicle on

the surface of the pots on which the glass is melted. It is used as a flux in the fusion of ores, and for other purposes. The term is probably a corruption of "Selle de verre."

Sap-colours.—A name given to various expressed vegetable juices of a viscid nature, which are inspissated by slow evaporation, for the use of painters, &c. Sap-green, gamboge, &c. are of this class.

Saponaceous.—A term applied to any substance which is of the nature or appearance of soap.

Saturation.—The act of impregnating a fluid with another substance, till no more can be received or imbibed. A fluid which holds as much of any substance as it can dissolve, is said to be saturated with that substance. A solid may in the same way be saturated with a fluid.

Sebates.—Salts formed by the combination of any base with sebacic acid.

Selenite.—A salt existing in spring water, formed by sulphuric acid and lime. Its proper chemical name is sulphate of lime.

Semi-metal.—A name formerly given to those metals which, if exposed to the fire, are neither malleable, ductile, nor fixed. It is a term not used by modern chemists.

Siliceous earths.—A term used to describe a variety of natural substances which are composed chiefly of silica; as quartz, flint, sand, &c.

Silicum.—The undecomposable base of rock crystal, or of the earth called silica.

Smelting.—The operation of fusing ores for the purpose of separating the metals they contain, from the sulphur and arsenic with which they are mineralised, and also from other heterogeneous matter.

Sodium.—The metallic base of the alkali called soda.

Solubility.—A characteristic of most salts.

Solution.—The perfect union of a solid substance with a fluid. Salts dissolved in water are proper examples of solution.

Spars.—A name formerly given to various crystallised stones; such as the fluor spar, the adamantine spar, &c. These natural substances are now distinguished by names which better denote the nature of each.

(To be continued.)

DIET AND REGIMEN.

But the invalid may ask—"Can I not have my ailments removed without abridging my appetites?" No! And the practitioner who undertakes the treatment under such conditions, betrays either a want of principle or a want of judgment.—Dr. James Johnson.

Is it to be wondered at that, in a commercial country, where sedentary occupations are the lot of a majority of the people, and a mode of living which may, with much justice, be characterised as *omnivorous*, is within the reach of all but the lowest grades of society, so few should be found who are perfectly free from stomach disturbances, who know not what indigestion means from their personal knowledge? There are, as far as my experience goes, but few instances of such perfect health; and there are therefore few who are in a situation to laugh at all dietetic regulation, and to eat, without risk, whatever is put before them. But even the few who have such perfectly unimpaired powers of digestion will be found chiefly to consist of those who live, and always have lived, plainly and frugally; who have, either from necessity or from habit, *dieted themselves*. The few, the very few among them, of whom this cannot be said, are, if middle-aged, men who have taken a great deal of exercise; or they are the young, who have had constitutions of iron to begin with; which constitutions sometimes take much hard work to wear them out. This may, I well know, be said to be going too far—to be saying too much; but those who have paid least attention to the subject will be the persons most apt to say so; those who have given to it much of their attention will, I think, agree with me. Man was destined to earn his bread by the sweat of his brow, to work for his food. Here there is a provision made for that which is so much neglected by all classes, but those with whom it is part and parcel of their occupation—I mean exercise. Unaided by his fellow men, destitute as yet of the advantages which a division of labour and commerce supply, his food would of necessity be confined to the few simple herbs which his own toil could extract from the earth, or to the animals which he had earned by his exertions in the chace. Here then are two of

the first, and the two most important regulations of which modern dietetics inculcate the observance, viz, exercise and simplicity of diet. For the best of all reasons, a man so situated would not indulge in the use of stimulants; he would not know either that they could be procured, or how to procure them; and consequently neither from ale, nor wine, nor spirits would he run any risk. And here we find the third section in nature's scheme of diet, viz., sobriety; and a sobriety, it will be observed, not merely the comparative degree of drunkenness; but positive temperance, complete abstinence from stimulating liquids. This then, may perhaps be said to be the natural state of man; the state in perfect accordance with which his organs were formed, and all the tissues of his body were fashioned and modified; the kind of diet and regimen from which the more he varies, the more does he oppose the dictates of nature, the more does he expose himself to the influence of disease, the greater risk does he run of essentially curtailing his existence, and the more active and energetic must be the interference of art to counteract as far as possible such consequences, and to spin out the existence of man. This then is the sum and substance; this is the foundation of dietetics; this then is the reason why medical men pay so much attention to the diet, and the regimen, as means of keeping man in health, and restoring it to him when he has lost it.

I shall now specify the comparative digestibility of the articles which are more usually seen at our tables; of the kinds of food which are ordinarily used by us. They are divided into the two natural classes—animal and vegetable substances. The animal substances are subdivided into meat, poultry, the animal principles, game and fish: the vegetable substances into grain, pot-herbs, vegetables eaten uncooked, fruits, the vegetable principles, &c., and liquors, the products of vinous fermentation.

The meats are placed in the order of their digestibility, beginning with those which are the most easily digested; and this is the plan pursued in all the following tables. It may be stated here that this order has been arranged from carefully scrutinised observation; that individual exceptions to every item must of course occur; but I think they will be only individual exceptions.

MEATS.

1 *Mutton*	3 †* *Lamb*
2 *Beef*	4 * *Veal*

5 * *Pork.*

These are, generally speaking, more digestible if broiled on a gridiron, still less so if roasted, still less so if boiled, still less so if baked, still less so if fried.

Baked meats owe their difficulty of digestion to the empyreumatic or burnt oil into which more or less of the fatty matters are converted; owing, as it seems to me, to the confined air, the want of ventilation in ovens. It is this oil which gives the peculiar flavour, recognisable by most, to meat, or anything containing fat, which is cooked in an oven; consequently, if the great object, a sufficiently high temperature, could be secured in connection with free ventilation, I think that baked meats would probably be as digestible as roasted.

Meat somewhat underdone is more digestible than if thoroughly cooked; for the obvious reason, that in the latter case the fibres are more contracted, more hardened, and therefore require more power, greater exertions of the stomach to separate their particles and convert them into pulp. For the same reason salted meats are much more indigestible than fresh meats; the salt contracting and hardening the fibres, and rendering them tougher, and therefore less yielding to the comminuting powers of the stomach and the solvent power of its secretions.

The degree of digestibility of each kind of meat will necessarily vary much according to the *age* of the animal, and the *part* which is eaten. It will be observed that the flesh of the full-grown animal is more digestible than that of the animal which is still growing; but this remark applies only to animals the flesh of which goes commonly by the name of "meat."

I think it necessary to direct the particular attention of the non-medical reader to the fact that I have marked veal as being difficult of digestion; because it is

† This mark (*) opposite to any of the substances in this or the following tables signifies that such are articles generally found to be unsuited to the dyspeptic.

a very common error to suppose it a proper article of diet for the invalid and convalescent. Veal, whether roasted, boiled, or stewed, or however cooked, ought to be banished from the sick-room. The invalid, unless he enjoy a very peculiar idiosyncrasy, will generally find it to disagree with his stomach.

(To be continued.)

THE FIVE VARIETIES OF THE HUMAN SPECIES.

(Continued from p. 238.)

Mr. Turner informs us, that "the people of Thibet have invariably black hair, small black eyes with long pointed corners, as if extended by artificial means, eyelashes so thin as to be scarcely perceptible, and eyebrows but slightly shaded. Below the eyes is the broadest part of the face, which is rather flat, and narrows from the cheek-bones to the chin. Their skins are remarkably smooth; and most of them arrive at a very advanced age before they can boast even the earliest rudiments of a beard. Their complexion is not so dark by many shades as that of the European Portuguese."

The Esquimaux are formed on the Mongolian model, although they inhabit countries so different from the abodes of the original tribes of central Asia.

"The male Esquimaux have rather a prepossessing physiognomy, but with very high cheek-bones, broad foreheads, and small eyes, rather further apart than those of an European. The corners of their eyelids are drawn together so close, that none of the white is to be seen: their mouths are wide and their teeth white and regular. The complexion is a dusky yellow, but some of the young women have a little colour bursting through this dark tint. The noses of the men are rather flattened, but those of the women are rather prominent. The males are, generally speaking, between five feet five inches and five feet eight inches high, bony and broad-shouldered, but do not appear to possess much muscular strength. The flesh of all the Esquimaux feels soft and flabby, which may be attributed to the nature of their food. But the most surprising peculiarity of this people is the smallness of their hands and feet."

The same characters belong to the several tribes of Esquimaux which are scattered over the whole breadth of the American continent. Humboldt mentions the affinity of the languages at the two extreme points; and Dr. Clark has noticed the complete resemblance of the dresses, ornaments, weapons, &c., brought by Mr. Chappell from Hudson's Straits to those in a collection made by Commodore Billings in the north-west extremity of the continent.

Similar descriptions might be quoted of the other people included under this variety.

III. In the Ethiopian Variety the skin and eyes are black; the hair black and woolly; the skull compressed laterally, and elongated towards the front; the forehead low, narrow, and slanting; the cheek-bones are prominent; the jaws narrow and projecting; the upper front teeth oblique; the chin recedes. The eyes are prominent; the nose broad, thick, flat, and confused with the extended jaw; the lips, and particularly the upper one, are thick. The knees, in many instances, turn in.

All the natives of Africa, not included in the first variety, belong to this.

The striking peculiarities of the African organisation, and particularly the great difference between its colour and our own, have led many persons to adopt the opinion of Voltaire, who had not a sufficient knowledge of physiology and natural history to determine the question that the Africans belong to a distinct species. We have shewn, in the preceding divisions of this article, that there is no one character so peculiar and common to the Africans, but that it is found frequently in the other varieties, and that Negroes often want it; also, that the characters of this variety run by insensible gradations into those of the neighbouring races, as will be immediately perceived by comparing together different tribes of this race, as the Foulahs, Jaloffs, Mandingoes, Kaffers, and Hottentots, and carefully noting how in these gradational differences they approach to the Moors, New-Hollanders, Arabians, Chinese, &c.

Again, great stress has been laid on the fact, that the Negroes resemble more nearly than the Europeans, the monkey

tribe: the fear of being drawn into the family, even as distant relations, has, we believe, induced many to place our black brethren in a distinct species; while others have brought forwards this approximation to the simæi, with the view of degrading the African below the standard of the human species, and thereby palliating the cruel hardships under which he groans in the islands and continent of the New World.

It is undoubtedly true, that in many of the points, wherein the Ethiopian differs from the Caucasian variety, it comes nearer to the monkeys; viz., in the greater size of the bones of the face, compared to those of the cranium; the low and slanting forehead; the protuberance of the alveoli and teeth; the recession of the chin; the form of the ossa nasi; the position of the foramen magnum occipitale; the outline of the union of the head and trunk; the relative length of the humerus and ulna, &c. This resemblance is most unequivocally admitted by those who have minutely examined the anatomical structure of the Negro. It appears to me, that this fact is not very important: if there are varieties of bodily formation among mankind, some one of these must approach nearer to the organisation of the monkey than the others; but does this prove that the variety in which the conformity occurs, is less man than the others? The solidungular variety of the common pig is more like the horse than other swine: do we hence infer, that the nature of this animal in general is less porcine, or more like that of the horse, than that of other pigs? The points of difference between the Negro and the European do not affect those important characters which separate man in general from the animals: the erect attitude, the two hands, the slow development of body, the use of reason, and consequently perfectibility, are attributes common to both.

(To be continued.)

J. STEPHENS,

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BOTANICAL JOURNAL
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MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 38.

ON LIGHT AS A CONDITION OF VITAL ACTIVITY.

The importance of this agent, not only to the vegetable, but to the animal world, is not in general sufficiently estimated. Under its influence alone can the first process be accomplished by which inorganic matter is transformed into an organic compound, adapted by its nature and properties to form part of the organised fabric. The following is an example of the simplest phenomenon of this kind, which demonstrates the influence of light more clearly on account of that simplicity:—If we expose some spring water to the sunshine, though it may have been clear and transparent at first, it presently begins to assume a greenish tint; and, after a while, flocks of green matter collect on the sides of the vessel in which it is contained. On these flocks, whenever the sun is shining, bubbles of gas may be seen, which, if collected, prove to be a mixture of oxygen and nitrogen, the proportion of the two being variable. Meanwhile the green matter rapidly grows, its new parts, as they are developed, being all day covered with air-bells which disappear as soon as the sun has set. If these observations be made upon a stream of water, the current of which runs slowly, it will be discovered that the green matter serves for food for thousands of water-insects which make their habitation in it. These insects are endowed with powers of rapid locomotion, and possess a highly organised structure. In their turn they fall a prey to the fishes which frequent such streams. Such is the general succession of nutritive actions in the organised creation. The highest animal is either directly dependant upon the vegetable kingdom for the materials of its fabric, or is furnished with these by some other animal; this, again, by another; and so on: the last in the series being always necessitated to find its support in the vegetable kingdom, since the animal does not possess the power of causing the inorganic elements to unite even into the simplest organic compound. There is abundant proof that light exercises an important influence on the processes of *development* in animals no less that in plants. Thus the appearance of animalcules in infusions of decaying organic matter is much retarded if the vessel be altogether secluded from it. Further, it has been ascertained, that if equal numbers of silk-worms' eggs be preserved in a dark room, and in one exposed to common daylight, a much larger proportion of worms are hatched from the latter than from the former. The most striking proof of the influence of light on animal development is, that if tadpoles be nourished with proper food, and be exposed to the constantly renewed contact of water, so that their respiration may be freely carried on, whilst they remain in their fish-like condition, but be entirely deprived of light, their growth continues; but their changing into the condition of air-breathing animals, viz. frogs, is arrested, and they *remain* in the condition of large tadpoles. Numerous facts lead to the belief that the healthy development of the human body, and the rapidity of its recovery from disease, are greatly influenced by the amount of light to which

it has been exposed. Thus it was remarked by Dr. Edwards, that persons who live in caves or cellars, or in very dark and narrow streets, are apt to produce deformed children, and that men who work in mines are liable to disease and deformity beyond what the simple closeness of the atmosphere would be likely to produce. Thus it has been stated by Sir A. Wylie (who was long at the head of the medical staff in the Russian army), that the cases of disease on the dark side of an extensive barrack at St. Petersburg have been uniformly, for many years, in the proportion of three to one to those on the side exposed to strong light; and in one of the London hospitals with a long range of frontage looking nearly due north and south, it has been observed that residence in the north wards is much less conducive to the welfare of the patients, than in those on the south side of the building. On the other hand, the more the body is exposed to the influence of light, the more freedom do we find from irregular action or conformation. Humboldt has remarked, that among several nations of South America who wear very little clothing, he never saw a single individual with a natural deformity; and Linnæus enumerates constant exposure to solar light as one of the causes which render a summer journey through high northern latitudes so peculiarly healthful and invigorating.

ON THE PSEUDO-SCIENCES.

(*Continued from page* 243.)

12. *Errors arising from the system of leadership.*—A degree of éclat (pomp, splendor) attaches to a man who is the originator of this new view or that particular doctrine. If he have selected his subject well, there is a positive source of profit. There is often a kind of power obtained by this popularity, which, in men of little minds and who love to patronise, gratifies even more than the praise of the unthinking audience. Unfortunately this is so commonly felt and acknowledged that men act upon it without questioning its morality, or their own qualifications for the task of leadership. Hence the present fashionable system of taking *specialities*, particularly in the medical profession, the speciality, in nine cases out of ten, being taken up, not because of a man's qualifications for the thing; not because his pursuits have by force led him to the subject; not because his previous education has been so elaborate, and his studies so deep in the numerous, peculiar and allied sciences of this noble profession; not because his comprehensive genius, grasping the whole range of medicine, sees that here or there he can elaborate a weak point or develop a hidden mystery; but because here or there "there is an opening." Then the journals are USED, then his conversation swells bigly with laboured thoughts on *his* speciality. Then he rushes about among his friends with profound and mysterious hints on the importance of this or that original idea. Then he speaks at societies through *his* peculiar trumpet; then somebody who can't speak either punctuates his large discourse with notes of admiration, or, as we have noticed more than once, by a full stop in the shape of some quaint remark which is very humiliating; till not heeding this hint, at length he commits the grand mistake of supposing that he is an authority, because he has obtained the envied goal of his laborious ambition, the dictatorship of a leader!

Nevertheless specialities are good; but those must be specialities of special men, not the men who have just finished their studies, or, lacking practice, seek notoriety, and look out for openings or riders into notoriety. To be sure, notoriety they may get, but not fame. A peculiar cab, or an extraordinary hammer-cloth, will give them notoriety, but it must be a peculiar thought and extraordinary talent that will give them fame. The man who is to be *the* leader, in the sense of an authority, cannot help it—the position is as naturally conceded to him as if he were born to the title; but your would-be authority, if he have impudence enough, may, meteor-like, flit across his own little circumscribed sphere, but as soon disappears from the horizon, and the "place thereof knoweth him no more."

But, also, specialities are bad in this latter sense, because men have to assume *to be* what they *are not;* they have to put on the *show* instead of working for the *reality*. And although they may deceive themselves into the belief that they

are working out one idea, they take with them such *media* of vision in its investigation, that their every thought is tinged by their colouring: so true is it that "the eyes see what they look for;" thence not only are they a source of error to the unthinking multitude, but a living deception to themselves.

COMPULSORY VACCINATION.

Our readers must be aware that the Public Health Act of last session, giving power to public vaccinators and other officials to prosecute, with *parochial* funds, parents who decline to vaccinate their children, will soon expire; consequently, the question of tyrannical vaccination will come up again this session. It is important, therefore, that petitions, both individual and collective, should pour into the House of Commons, praying for the repeal of the compulsory clauses of the Act of 1853, and for the rejection of any measure making vaccination compulsory. We append a form of petition, which may be altered to suit the views of individuals, or adopted as it is; the following rules must be observed in preparing and forwarding petitions. Let each person who has an opinion, or conviction, unfavourable to compulsory vaccination, send in a petition as soon as possible, and get others to join if he can.

FORM OF PETITION.

To the Hon. the Commons of the United Kingdom in Parliament assembled.

The humble petition of the undersigned inhabitants of [*or* of the undersigned, John Smith, grocer (*or* carpenter, as the case may be), residing at]

Sheweth, that your petitioners [*or* petitioner], regarding compulsory vaccination as a violation of constitutional principles and parental rights, urgently pray (*or* prays) for the early repeal of the compulsory clauses of the Vaccination Act of 1853, and the rejection of any measure making vaccination compulsory. And your petitioners will ever pray, &c.

[Here follow the signatures or signature.]

Rules to be observed in preparing and forwarding petitions:—

Petitions to the House of Commons should be addressed, "To the Hon. the Commons of the United Kingdom in Parliament assembled, the humble petition of the undersigned sheweth."

Petitions to the Lords should commence in like form, "To the Right Hon. the Lords Spiritual and Temporal of the United Kingdom," &c.

A petition must be in English, and entirely in writing, without any erasure or interlineation; no printed matter whatever will be received. Should a petition extend to two or more sheets, they must be pasted together in the form of a book, by the upper edges, or lengthwise as a scroll. A petition must state a grievance, and conclude with a specific prayer. It must not be written on two sides of a sheet, signatures on the back of a sheet not being counted; at least, one signature must be on the same sheet on which the petition is written; each signature must be in the hand-writing of the petitioner, unless when he (or she) makes a mark, thus, X, or in case of sickness, when another person may sign, stating the reason. Neglect of any of these rules may cause the rejection of a petition. Petitions are post-free, if left open at the ends like newspapers, marked on the cover, "Petition to Parliament," and addressed to a member by name, adding "House of Lords," or "House of Commons, Westminster, S.W.," as it may be.

We would now call the attention of our readers to the following cases of tyrannical oppression:—

"Yesterday, at the Bury Petty Session, Richard Lowman, coachman, was fined £1 : 11, including costs, for declining to have his child vaccinated after due notice had been given to him by the registrar."—*Alliance Weekly News*, Jan. 15, 1859.

"At the Bridgewater Town Hall, on Monday last, a labourer named George Fry, was brought before the magistrates and fined the full penalty of £1, with 18*s.* 6*d.* costs, for factiously and vexatiously refusing to have a child vaccinated, due notice having been served upon him according to the Act of Parliament. The magistrates expressed a hope that the case would be reported in the public press."

The following spirited remarks are taken from the *West Surrey Times*, Jan. 29, 1859:—

"We think it well, for other reasons

than those intended by the bench at Bridgewater, to give publication to the fact narrated. We deem it right to denounce the arbitrary administration of one of the most tyrannical laws disgracing our Statute-book. For what has a poor labourer been convicted and fined with such relentless rigour? It may be because he has no faith in the preventive virtues of vaccination. It may be because he conscientiously believes the operation to be perilous to the health or life of his child. He must, however, have no such squeamish scruples; he must yield his parental right; he must waive his conscientious objections; he must give up all ideas of personal liberty. He has 'factiously and vexatiously' resisted the law, and he must be punished, not by the infliction of a mitigated fine, but with the highest penalty the law directs. His case must be trumpeted abroad also, that other like-minded 'evil-doers' may learn to tremble at the pains and penalties of the Compulsory Vaccination Act, and quail before the bench at Bridgewater. If we turn to the Registrar-General's returns, we discover that vaccination, in the present day, fails to fulfil the expectations once formed of it, and is in many instances the cause of death."

It must have been apparent, too, that the popular belief in the antidotal power and the innocuousness of vaccination has of late years declined, and that many intelligent persons strongly object to it, as an operation which they regard as unscientific and unnatural. It is much to be regretted, therefore, that, concurrently with such a state of things, and in violation of a distinct pledge of the late administration, that a parliamentary inquiry should precede further legislation on the subject, a clause was insidiously inserted in the Public Health Act of last session, giving powers to public vaccinators and other officials to prosecute with parochial funds.

The reputation of vaccination itself, and the interests of the public, call for a thorough and impartial investigation of the subject in all its bearings. Let it have it, and we have little doubt that the Compulsory Vaccination Act will be speedily doomed to the oblivion it deserves.

The following subscriptions have been collected towards defraying the above costs, and it is hoped that this small beginning may lead to the establishment of a fund to defend others also who conscientiously object to have this disgusting panacea forced upon their children:—

From J. G., 5*s.*; A Lady, 4*s.*; J. S., 2*s.* 6*d.*; J. S., 2*s.* 6*d.*; A Friend, 2*s.* 6*d.*; D., 1*s.*; C., 1*s.*; A Friend, 1*s.*; J. G., London, 1*s.*; together, £1 : 0 : 6.

JOHN STEPHENS.

108, *Ratcliff Highway.*

DIET AND REGIMEN.

(*Continued from page* 251.)

THE flesh of an animal which is killed in good health, and good condition, is much more digestible than that of an animal which is either sickly, or lean and spare of flesh, at the time of its being killed. The more free the part eaten is from skin, cellular membrane, and fatty matters between the fibres, other things being equal, the more digestible will it be. All the glandular parts, however, or, as they are called, the organs, are difficult of digestion; to which class belong liver, kidney, tripe, heart, tongue, &c.

Animal food is almost invariably more easily digested if it has undergone some degree of putrefactive change; at least so much of such change as is sufficient to make the fibres more tender. If the change has gone a little further than this, it generally nauseates; and either interrupts or disturbs the digestive process.*

It seems necessary that a word or two should be said in this place about bacon, which is now so much vaunted as a remedy for indigestion. In the great number of cases, I do not hesitate to say that it must do harm—in all cases where the juices of the stomach are either deficient in quantity or vitiated in quality;

* Although not exactly relevant to the subject, it may not be quite uninteresting to the general reader, if I mention that the gastric juice has extraordinary power in counteracting and correcting putrefaction. This is, perhaps, more the case in some animals than others, as in those that feed on carrion; but it is likewise the case in man. It *explains* the fact, that more or less putrified meat may be eaten with impunity, which, but for this beautiful provision of nature, absorbed in an uncorrected and unaltered state, would taint the whole system, and would undoubtedly either destroy life, or put it in most imminent risk.

where the tissues want power, or where they are in a state of inflammatory excitement; in fact in all cases where the indigestion has its *seat* in the *stomach*. But in cases where the juices of the stomach are sufficient in quantity, and healthy enough in nature, to mix with the food, and act on it chemically; where the contractile powers of the stomach are sufficient to grind the mass into a pulp; in short, in all cases in which the food is digested by the stomach, is ejected in the proper state into the bowels, and where all that is wanting is a *stimulus* to carry the mass forwards through the intestines; the laxative properties of the fat, and of the salt contained in the bacon, will act beneficially; and in such cases bacon will, no doubt, be of service. But, as I have said, such is far from being the general cause of indigestion; a comparatively small number of the cases that we meet with are of this nature, and consequently I would advise the dyspeptic to resort to it most cautiously, unless he is guided by the advice of his medical attendant.

POULTRY.

1 *Fowl*	3 * *Duck*
2 *Turkey*	4 * *Goose.*

Of birds in general it may be said, that they are digestible in proportion to their *youth*. It will be observed that I have *marked* duck and goose as being of difficult digestion, and it is an observation which may be applied, with a few exceptions, to all water-birds. They are much fatter, their flesh is tougher, and it is so thoroughly mixed up with fatty cellular substance, that the *civilised stomach* must either have a most happy and unusual idiosyncrasy, or else be in a state of unusual healthiness, to bear either duck or goose without inconvenience.

Chicken-broth is so often used in the sick-room, that this seems to be a proper place to make a few remarks upon it, and upon broths in general, as articles of diet for the invalid or the dyspeptic.

The first great objection to broths is fat, more or less of which they almost always contain, unless they have been allowed to stand until they have become quite cold, and the fat, then risen to the surface, has been taken off; the broth being warmed up for use. This objection may in this way always be got rid of; the next to be mentioned is made of sterner stuff. The dyspeptic will usually, and the debilitated invalid will not unoften, find that much *liquid* of any sort, however harmless, will produce a sense of fulness and uneasiness in the stomach, with or without other symptoms which mark disturbance of its functions. I shall have occasion, by-and-by, to revert to this subject. This effect is very apt to be produced by all sorts of *unthickened slops*. They do not afford sufficient *resistance* to the contractile powers of the stomach, to enable those powers to act on and digest them. There are cases, of course, which are exceptions to this remark; but so general is the rule, that it is seldom I think it right to order unthickened chicken-broth, or mutton-broth, for my patients. Thickened with arrow-root, or with any of the simple farinacea, they often agree well, and form a palatable and nourishing diet.

Broth with vegetables in it, is, for reasons which will be understood by referring to the remarks made under that class of substances, highly objectionable, and should never be eaten by the dyspeptic.

GAME.

1 *Hare, hunted*	6 *Ptarmigan, Blackcock*
2 *Partridge*	7 *Hare*
3 *Pheasant*	8 *Snipe, Woodcock, &c.*
4 *Venison*	
5 *Grouse*	

No one of these can be pronounced to be difficult of digestion. The long-billed birds are the most doubtful; they do disagree at times, and by the decided dyspeptic they ought not to be eaten. Game leaves the stomach very soon, and seldom gives it much to do. The distinction which is made in the above table between the digestibility of hare that has been killed by hunting, and one which has been in any other way deprived of life, may surprise some; but there is, perhaps, no *solid* article of food which leaves the stomach so soon as hunted hare. The only article about the place of which, in the above table, I am doubtful, is venison. This doubt is attributable to the way in which it is usually cooked. I think few who had eaten a broiled

venison steak would have reason to find fault with its digestibility.

Some writers have laid much stress on the *part* of an animal which is eaten, and have directed the invalid to eat only *this* part of *this* animal, or *that* part of *that*. I will content myself with simply saying that the part, the fibres of which are the most tender, and the most free from skin, fat, or cellular membrane, is the part of every animal which is the most easily digested.

ANIMAL PRINCIPLES.

1 *Gravy*	3 *Fibrin*
2 *Gelatin*	4 ** *Fatty Matters*

In the above table the common animal principles are classed in the order of their digestibility.

Under the first head, gravy, I include simple beef-tea, made very strong, from lean beef, allowed to cool, the fat, then risen to the surface, wholly removed, and warmed up for use with the addition of only a few pepper-corns and a little salt. This is a kind of food which agrees well with the stomachs of most dyspeptics, at all events with most of those whose cases are not to be looked upon as severe. The use of broths I have spoken of elsewhere.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

COMFREY (SYMPHYTUM OFFICINALE.)

THIS is a perennial plant, the root of which is used. The stem is from two to three feet high. The flower is sometimes purple. It is frequent in moist and watery situations, and flowers from the end of May to September.

The root abounds in a pure, tasteless mucilage, like that of the marsh mallow.

Medicinal qualities.—It is a good tonic, acts friendly on the stomach. It is also mucilaginous, and very useful where the mouth, throat or stomach has become sore. It is good in female weakness. The following sirup will be found very useful, as well as in early consumption:—One handful of clean roots bruised, two ounces of ginger root bruised fine, and a handful of horehound; boil in two quarts of water, strain, then add two nutmegs, grated, a teaspoonful of cayenne, and two pounds of sugar.—A dose of a tablespoonful, three times a day, taken for a short time, will afford great relief.

THE FIVE VARIETIES OF THE HUMAN SPECIES.

(Concluded from p. 252.)

THAT very little importance can be attached to the general observation of the resemblance of the Negro and monkey, founded on external appearance, may be clearly inferred from this fact, that the same remark has been made, even by intelligent travellers, of particular people in the other varieties. Regnard concludes his description of the Laplanders with these words: "Such is the description of the little animal named Laplander, of which it might be said, that, next to the monkey, it approaches nearest to man."

Cartwright thought the Esquimaux very like monkeys: he informs us, "that walking along Piccadilly one day with

COMFREY.

the two men, I took them into a shop to shew them a collection of animals. We had no sooner entered, than I observed their attention riveted on a small monkey; and I could perceive horror most strongly depicted in their countenances. At length the old man turned to me and faltered out, 'Is that an Esquimau?' I must confess that both the colour and contour of the countenance had considerable resemblance to the people of their nation. On pointing out several other monkeys of different kinds, they were greatly diverted at the mistake which they had made; but were not well pleased to observe that monkeys resembled their race much more than ours."

Nic. del Techo represents a native tribe in South America as "more like a monkey than a man." Cook calls the people of the island Mallicollo "an ape-like nation;" and Forster uses the same comparison: "The natives of Mallicollo are a small, nimble, slender, ill-favoured set of beings, that of all men I ever saw border nearest upon the tribe of monkeys." As the characteristic form of the head and features of the Negro are just opposite to those of the Esquimaux and native Americans, we must regard these comparisons, which cannot be correct in all the instances, as loose expressions, not meant to be interpreted literally.

Under the Ethiopian variety, as under the Caucasian and Mongolian, are included numerous nations and tribes distinguished from each other by well-marked modifications of organisation and moral qualities. Nothing is more erroneous than the common notion that all Africans have one and the same character. The diversities of features and skulls are equally as strong as the distinctions observable in general character, whether physical or moral. To the proofs of the former point before adduced, may here be added the testimony of Dr. Winterbottom: "As great a variety of features occurs among these people as is to be met with in the nations of Europe: the sloping, contracted forehead, small eyes, depressed nose, thick lips and projecting jaws, with which the African is usually caricatured, are by no means constant traits: on the contrary, almost every gradation of countenance may be met with, from the disgusting picture too commonly drawn of them, to the finest set of European features. Want of animation does not characterise them, and faces are often met with which express the various emotions of the mind with great energy."

Mr. Edwards, who had seen them in the West Indies, regards the Foulahs as a link between the Moors and Negroes. "They are of a less glossy black than those of the Gold Coast; their hair is crisped and bushy; not woolly, but soft and silky. They have not such flat noses or thick lips as we generally include in our notion of the Negro countenance; nor have they the peculiar fetid cutaneous odour. The Koromantyns from the Gold Coast are characterised by firmness of body and mind, activity, courage and ferocity; by the greatest fortitude and contempt of death. He adduces a horrid example of these qualities in a punishment inflicted for revolt. Two of them were hung up alive in chains: one died on the eighth, the other on the ninth day, without having uttered a groan or complaint. The Eboes from the Bight of Benin "are the lowest and most wretched of all the nations of Africa. I cannot help observing, too, that the conformation of the face, in a great majority of them, very much resembles that of the baboon."

In some parts of Africa, intermixture with other nations may have produced occasional departures from the original type of the race. In the north, the aboriginal Berber tribes, and subsequently, the Arabian or Saracen conquerors, not to mention the Phœnician, Greek, Roman and Turkish colonists, must have mingled extensively with the Negroes. On the east, the kingdom of Abyssinia is of Arabian origin; and traces of the same people are found along the coast, nearly as far as the Cape. Europeans, and particularly the Portuguese, have had settlements on the west coast between three and four centuries. The result of such mixtures must not be confounded with native differences.

The tribes in the south of Africa are marked by strong peculiarities. The fine forms, tallness and strength of the Kaffirs have been already observed. Although their hair is black and woolly, or rather short and curling, the skin is of a deep

brown instead of black; they have the high forehead and prominent nose of Europeans, with thickish lips and projecting cheek-bones. In moral qualities, arts and civilisation, they excel the true Negroes as much as in organisation.

The Hottentot race is again clearly distinguished both from the Kaffirs and Negroes. The colour of the skin is a yellowish-brown, or that of a faded leaf. The cheek-bones are high and much spread out in the lateral direction, so that this is the broadest part of the face; which is suddenly contracted below to a very narrow and pointed chin. The nose is remarkably flat and broad towards its end; but in some it is more raised. The forehead has a narrow appearance, from the great breadth across the cheeks; but it is not either contracted or low. "The colour of the eyes is a deep chestnut; they are very long and narrow, removed to a great distance from each other; and the eyelids, at the extremity next to the nose, instead of forming an angle, as in Europeans, are rounded into each other, exactly like those of the Chinese, to whom, indeed, in many other points, they bear a physical resemblance. The hair is of a very singular nature: it does not cover the whole surface of the scalp, but grows in small tufts at certain distances from each other, and when kept short has the appearance and feel of a hard shoe-brush, with this difference, that it is curled and twisted into small round lumps, about the size of a marrowfat pea. When suffered to grow, it hangs in the neck in hard twisted tassels like fringe." The organisation of the Bosjesmen is the same in all essential points.

IV. The AMERICAN VARIETY is characterised by a dark skin of a more or less red tint; black, straight, and strong hair; small beard, which is generally eradicated; and a countenance and skull very similar to those of the Mongolian tribes. The forehead is low, the eyes deep, the face broad, particularly across the cheeks, which are prominent and rounded. Yet the face is not so flattened as in the Mongols; the nose and other features being more distinct and projecting. The mouth is large, and the lips rather thick. The forehead and vertex are in some cases deformed by art.

This variety includes all the Americans, with the exception of the Esquimaux.

The redness of the skin is not so constant, but that it varies in many instances towards a brown, and approaches in some situations to the white colour. Cook states, that the natives of Nootka Sound have a colour not very different from that of Europeans, but with a pale, dull cast; and Bouguer makes the same observation of the Peruvians on the Andes. Humboldt observes, that "the denomination of copper-coloured men could never have originated in equinoctial America to designate the natives." Mr. Birkbeck says of the natives, whom he saw in the western territory of the United States, "that their complexion is various; some are dark, others not so swarthy as myself; but I saw none of the copper-colour which I had imagined to be their universal distinctive mark."

In describing the Chilians, Molina says, "Their complexion, like that of the other American nations, is of a reddish-brown, but it is of a clearer hue, and readily changes to white. A tribe who dwell in the province of Baroa are of a clear white and red, without any intermixture of the copper-colour."

The most accurate observers, in various parts of the continent, have particularly noticed the imperfect development of the forehead in the American race. "In the natives of Nootka Sound," says Cook, "the visage of most is round and full; and sometimes also broad, with high, prominent cheeks; and above these the face is frequently much depressed, or seems fallen in quite across between the temples; the nose also flattening at its base, with pretty wide nostrils, and a rounded point. The forehead rather low." The same lowness of this region is remarked by Hearne in the northern Indians; by Lewis and Clarke, of the western tribes; by Mr. Rollin, the surgeon who accompanied La Perouse, of the natives of the western coast in 58° N. lat., of the Californians, and the Chilians; by Dampier, of those on the coast of Nicaragua and the Isthmus of Darien; and by Humboldt, of the Americans generally. In describing the Chaymas, he says that "the forehead is small, and but little prominent. Thus,

in several languages of these countries, to express the beauty of a woman, they say that she is fat, and has a narrow forehead." A singular intellectual defect has been noticed in some Americans, and may, perhaps, be connected with this peculiarity in the configuration of the head. "The Chaymas have a great difficulty in comprehending anything that belongs to numerical relations. I never saw a single man who might not be made to say that he was eighteen or sixty years of age." Wafer observes the same circumstance in the Isthmus of Darien. The Indians attempted to reckon a party of between three and four hundred persons: one of them put a grain of maize into a basket for each that passed; but they could not cast it up. Some days after, twenty or thirty of the chief men came together, and tried their skill. "But, when they could tell no further (the number probably exceeding their arithmetic), and seemed to grow very hot and earnest in their debates about it, one of them started up, and, sorting out a lock of hair with his fingers, and shaking it, seemed to intimate the number to be great and unknown, and so put an end to the dispute. But one of them came after us, and inquired our number in broken Spanish."

Several fabulous reports have been propagated, and entertained by writers of credit, respecting the distinguishing characters of this race. The representation of their entire natural deficiency of beard has been rectified already. It has been asserted that the women are not subject to the menstrual discharge; and that in some places the men suckle, and not the women. A formal refutation of such fancies cannot be necessary.

V. Malay Variety.—Brown colour, from a light tawny tint, not deeper than that of the Spaniards and Portuguese, to a deep brown approaching to black. Hair black, more or less curled, and abundant. Head rather narrow; bones of the face large and prominent; nose full and broad towards the apex; large mouth.

The inhabitants of the peninsula of Malacca, of Sumatra, Java, Borneo, Celebes, and the adjacent Asiatic islands; of the Molucca, Ladrone, Philippine, Marian, and Caroline groups; of New Holland, Van Diemen's Land, New Guinea, New Zealand, and the numberless islands scattered through the whole of the South Sea, belong to this division. It is called Malay, because most of the tribes speak the Malay language; which may be traced, in the various ramifications of this race, from Madagascar to Easter Island.

Under this variety, to which, in truth, no well-marked common characters can be assigned, are included races of men very different in organisation and qualities; too different indeed to be arranged with propriety under one and the same division, but hitherto too imperfectly known for the purposes of satisfactory arrangement.

In that division of the abodes of this race which may be called the Southern Asiatic, or East-Indian islands, we find at least two very different organisations; namely, one Negro-like, black, with strongly curled hair; another, of brown or olive-colour, with longer hair. The first, regarded as the aboriginal inhabitants, occupy some islands entirely, but are found in the larger ones in the mountainous interior parts, whither they seem to have been driven by the encroachments of new settlers. They resemble the African Negroes in their black colour, woolly hair, and general formation of the skull and features; and hence they are called, by the Dutch writers, Negroes and Moors. They are distinguished, however, by their language, and by a copious bushy beard. In Sumatra, they are called Batta; in Borneo, Biajos; in the Moluccas, Haraforas or Alfoeras; in the Philippines, Ygolotes. They are wild, barbarous, and uncivilised, like their African kindred.

Colonel Symes, who visited the great Andaman Island on his voyage to Ava, describes the natives as seldom exceeding five feet, having slender limbs, large bellies, high shoulders, and large heads. They had woolly hair, flat noses, and thick lips; and skin of a deep sooty black. They are naked, and in a state of complete barbarism.

The lighter-coloured race, with more oval countenance, longer hair, and finer forms altogether, occupy the coasts of the larger islands, and some smaller ones entirely. Many of them shew their

Malay origin, by their organisation, language, and manners; and appear to have gradually spread from the continent over the adjacent islands. Others, however, cannot be traced so satisfactorily to this source.

In the numerous larger and smaller islands of the South Sea, extending from New Holland to Easter Island over a space of nearly 140 degrees of longitude, very various tribes are found, of light-brown or olive to black colour, of woolly or long hair, tall or short, handsome or ugly; and that often very near each other. They may be arranged, as in the latter case, under two divisions; between which, however, there are several intermediate gradations forming an insensible transition from the one to the other.

1st, Negro-like men, with curly hair, occupy the south-western islands; and may, perhaps, have descended from the analogous race in the Moluccas and other East-Indian islands. They are savage, ferocious, and suspicious.

This race is found in New Holland and Van Diemen's Land, New Guinea, New Britain, and the adjacent group sometimes called Solomon's Islands, New Georgia and the Charlotte Islands, the New Hebrides, including Tanna, Mallicollo and others, New Caledonia, and the Feejee Islands.

The remaining islands of the South Sea, from New Zealand on the west, to Easter Island, contain a race of much better organisation and qualities. In colour and features, many of them approach to the Caucasian variety; while they are surpassed by none in symmetry, size, and strength. They have made considerable advances in civilisation, and readily learn the arts imparted by their European visitors.

A VOCABULARY OF CHEMICAL TERMS.

(Concluded from page 249.)

Spelter.—The commercial name of zinc.

Spirit.—A term used by the early chemists to denote all volatile fluids collected by distillation.

Spirit, proof.—A term made use of to describe such ardent spirits as are of the same strength as the brandy of commerce, or of the specific gravity of 0.930, water being 1.000.

Stalactites.—Certain concretions of calcareous earth found suspended like icicles in caverns. They are formed by the oozing of water through the crevices charged with this kind of earth.

Steatites.—A mineral composed of silica, iron, magnesia, &c. It is also called French chalk, Spanish chalk, and soap-rock.

Stratification.—A chemical operation by which bodies are placed in a condition to act mutually upon each other by being arranged layer by layer, as is practised by metallurgists.

Strontium.—The undecomposable base of the earth called strontites.

Subsalts.—Salts with less acid than is sufficient to neutralise their radicals.

Suberates.—Salts formed by the combination of any base with the suberic acid.

Sublimate.—A name given to several mercurial preparations.

Sublimation.—A process whereby certain volatile substances are raised by heat, and again condensed by cold into a solid form. Flowers of sulphur are made in this way. The soot of our common fires is a familiar instance of this process.

Succinates.—Salts formed by the combination of any base with the succinic acid.

Sugar.—A well-known substance, found in a variety of vegetables, composed of oxygen, hydrogen, and carbon.

Sulphates.—Salts formed by the combination of any base with the sulphuric acid.

Sulphites.—Salts formed by the combination of any base with the sulphurous acid.

Sulphures, or sulphurets.—Combinations of alkalies, or metals, with sulphur.

Sulphureted.—A substance is said to be sulphureted when it is combined with sulphur. Thus we say sulphureted hydrogen, &c.

Supersalts.—Salts with an excess of acid, as the supertartrate of potash.

Synthesis.—When a body is examined by dividing it into its component parts, it is called analysis; but when we attempt to prove the nature of a substance by the union of its principles, the operation is called synthesis.

Syphon.—A bent tube, used by chemists for drawing liquids from one vessel into another.

Tartrates.—Salts formed by the combination of any base with the acid of tartar.

Temperature.—The absolute quantity of free caloric which is attached to any body occasions the degree of temperature of that body.

Tenacity.—A term used when speaking of glutinous bodies. It is also expressive of the adhesion of one substance to another.

Test.—That part of a cupel which is impregnated with litharge in the operation of refining silver. It is also the name of whatever is employed in chemical experiments to detect the several ingredients of any composition.

Test-papers.—Papers impregnated with certain chemical reagents; such as litmus, turmeric, radish, &c. They are used to dip into fluids to ascertain, by a change of colours, the presence of acids and alkalies.

Thermometer.—An instrument used to show the relative heat of bodies.

Tincal.—The commercial name of crude borax.

Tinctures.—Solutions of substances in spirituous menstrua.

Torrefaction.—An operation similar to roasting.

Tritorium.—A vessel used for the separation of two fluids which are of different densities. The same operation may be performed by a common funnel.

Trituration.—A chemical operation whereby substances are united by friction. Amalgams are made by this method.

Tubulated.—Retorts which have a hole at the top for inserting the materials to be operated upon without taking them out of the sand heat, are called tubulated retorts.

Tungstates.—Salts formed by the combination of any base with tungstic acid.

Tutenag.—An Indian name for zinc. Chinese copper is also called by this name, which is a compound of copper, tin and arsenic, much resembling silver in colour.

Union, chemical.—When a mere mixture of two or more substances is made, they are said to be mechanically united; but when each or either substance forms a component part of the product, the substances have formed a chemical union.

Ustulation.—The roasting of ores, to separate the arsenic, sulphur and what ever else is of a volatile nature that is connected with and mineralises the metal. When the matter is preserved which flies off, the process is called sublimation; but when this matter is neglected, the operation is called ustulation.

Vacuum.—A space unoccupied by matter. The term is generally applied to the exhaustion of atmospheric air by chemical or philosophical means.

Vapour.—A term used by chemists to denote such exhalations only as can be condensed and rendered liquid again at the ordinary atmospheric temperature, in opposition to those which are permanently elastic.

Vats.—Large chemical vessels, generally of wood, for making infusions.

Vital air.—Oxygen gas.

Vitrification.—When certain mixtures of solid substances, such as silica and an alkali, are exposed to an intense heat so as to be fused and become glass, they are then said to be vitrified or to have undergone vitrification.

Vitriols.—A class of substances, either earthy or metallic, which are combined with the vitriolic acid.

Volatile salts.—The commercial name for carbonate of ammonia.

Volatility.—A property of some bodies which disposes them to assume the gaseous state. This property seems to be owing to their affinity for caloric.

Volume.—A term made use of by modern chemists to express the space occupied by gaseous or other bodies.

Water.—The most common of all fluids, composed of 85 parts of oxygen and 15 of hydrogen.

Water, mineral.—Waters which are impregnated with mineral and other substances are known by this appellation. These minerals are generally held in solution by carbonic, sulphuric or muriatic acid.

Way, dry.—A term used by chemical writers when treating of analysis or

decomposition. By decomposing in the dry way, is meant, by the agency of fire.

Way, humid.—A term used in the same manner as the foregoing, but expressive of decomposition in a fluid state, or by means of water and chemical reagents or tests.

Welding-heat.—That degree of heat in which two pieces of iron or platina may be united by hammering.

Wolfram.—An ore of tungsten containing also the oxides of manganese and iron.

Worm-tub.—A chemical vessel with a pewter worm fixed in the inside, and the intermediate space filled with water. Its use is to cool liquors during distillation.

Woulfe's apparatus.—A contrivance for distilling the mineral acids and other gaseous substances with little loss; being a train of receivers with safety pipes and connected together by tubes.

Zaffre.—An oxide of cobalt, mixed with a portion of siliceous matter. It is imported in this state from Saxony.

Zero.—The point from which the scale of a thermometer is graduated.

Zirconium.—The pure base of the earth called zirconia.

SENTENCE ON THE WATTERS GANG.

The readers of our Journal will feel glad on learning the atrocious Watters crew have met with well-merited punishment—an imprisonment of eighteen months with hard labour. We trust that this example will not be lost on certain other swindling quacks who do business in the same line. At the same time, this exposure will, it is to be hoped, act as a warning to a too credulous public against swindlers of a like character.

G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

34, WORCESTER STREET,

Sole Agent for Dr. Coffin in Birmingham, from whom all the Herbs, Roots, Barks, and preparations used in the Botanic Practice, can be had genuine.

Mr. Caldwell may be consulted daily, from 10 to 12 in the morning; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

NOTICES.

Dr. Coffin may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. Coffin may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

Dr. Coffin may likewise be gratuitously consulted at his Agent's, Mr. T. Bean's, No. 7, Bridge-house-place, Newington-causeway, on every Monday evening, from half-past six to nine o'clock, and on every Thursday morning, from nine to one o'clock.

The Practitioners and Agents of the Medico-Botanic Society, in connection with Dr. Coffin, are respectfully informed that the Eighth Annual Meeting of the above Society will be held on Tuesday, the 2nd day of August next, 1859, at No. 17, Irongate, Derby, when a full attendance of the Members is earnestly requested. The business of the Meeting will be commenced at half-past ten, a.m.

On behalf of the Committee,
J. THOMAS, General Secretary.

Office, 7, Hinde Street, Scotswood Road, Newcastle-on-Tyne, July 12th, 1859.

J. STEPHENS,

Eight years accredited Agent for Dr. Coffin, for Ratcliff, Shadwell, Limehouse, Stepney, Poplar, and the surrounding districts, may be consulted daily (gratis), at 108, Ratcliff Highway; and of whom may be had all the Herbs, Roots, Barks, Powders, Pills, and other Medicines used in the practice.

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Mr. Naden is not in the habit of *adulterating* the Remedies he sells, and, therefore, they cannot be sold *so cheap* as those that are.

NOTICES TO CORRESPONDENTS.

John Jefferson.—Your request cannot at present be complied with. The herbs will appear in our series, but we cannot state the time.

Post-office Orders and all communications for goods, &c., to be addressed to William Ford, 134, High Holborn.

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 39.

ON HEAT AS A CONDITION OF VITAL ACTIVITY.

The most perfectly organised body, supplied with all the other conditions requisite for its activity, must remain completely *inert*, if it do not receive sufficient stimulation by heat; for each vital action requires a certain amount of heat for its performance. If the temperature of the body be lowered to about thirty degrees below its usual standard, not only is there a cessation of vital *activity*, but a total loss of vital *properties;* in other words, the death of the animal is a necessary result. This occurrence is preceded by a gradually increasing torpidity, which shows the depressing influence of the cooling process upon the functions in general. The temperature of the superficial parts of the body is, of course, soonest affected: the circulation is at first retarded, causing lividity of the skin; but, as the temperature becomes lower, the blood is almost entirely expelled from the surface by the contraction of the vessels, and paleness succeeds. At the same time there is a gradually increasing torpor of the nervous and muscular systems, which first manifests itself in an indisposition to exertion of any kind; and then in an almost irresistible tendency to sleep. At the same time the respiratory movements become slower, from the want of the stimulus that should be given by the warm current of blood to the medulla oblongata (the commencement of the spinal cord), which is the centre of these movements, and the loss of heat goes on, therefore, with increased rapidity till death takes place. But when there is a deficiency of the proper *animal* heat, the vital activity of the system may be maintained by heat supplied by external sources. This fact is of high scientific value, as giving the most complete demonstration of the *immediate* dependance of the vital functions of warm-blooded animals upon a sustained temperature; and its practical importance can scarcely be overrated. (Here is a proof of Dr. Coffin's main principle, that "heat is life, cold is death," and that, whilst the equilibrium of heat is kept up, so long will the patient live, and when the equilibrium is perfectly restored, the patient is saved.)

The actual range of temperature within which vital activity can be maintained by warm-blooded animals is extremely limited. A temporary elevation of the bodily heat to thirteen degrees above the natural standard, or a depression of thirty degrees below it, is positively inconsistent, not merely with the continuance of vital operations, but also with the preservation of vital properties; and a continued departure from that standard, to the extent of only a few degrees above or below it, is decidedly injurious.

CASE OF A CURE OF FITS.

To the Editor of the Botanical Journal.

Sir,—I now have the pleasure of communicating to you the particulars of a case of disease, which fully proves the truth of Dr. Coffin's theory, viz., "that disease is loss of animal heat, or a disturbed operation of it;" and "to regain this heat, when lost, and restore the

stomach and its functions to a healthy action, should engage our whole attention." John Cairns, a boy fifteen years of age, had several fits in the course of a fortnight. During the attack the left side of the face was violently convulsed, and immediately preceding each fit there occurred a twisting sensation of the left arm, which caused him to call out for some one to take hold of it to prevent it turning round. When the violence of the symptoms abated, and sensibility returned, he was unable to speak for several minutes, and felt a desire to vomit; the left arm and side became partially paralysed, and he complained of a tingling sensation in the arm; his appetite was very bad, and the bowels costive. I made a strong decoction of vervain, pennyroyal, burdock-seeds, and valerian-root, with cayenne, of which he took a tablespoonful every two hours, a dose of stomach bitters night and morning, two Indian pills at night, and a vapour-bath every day. In one week the equilibrium was restored, the stomach regained its tone, the bowels became regular, and the cure was completed by a few days' course of stimulants, tonics, astringents, and diuretics.

The above case requires little or no comment, as its solution may be found in almost every chapter of the "Guide to Health."

I am, sir, yours very respectfully,
R. Brown.

7, *West Hind-street, Newcastle-on-Tyne,*
26 *July*, 1859.

I have much pleasure in certifying that the above statement is strictly correct.
John Cairns.

ANOTHER MANSLAUGHTER BY A SURGEON.

Dan Gilpin Thackeray, aged fifty, was charged with the manslaughter of Eliza Connor, aged twenty-five, the wife of William Connor, a ribbonmaker, at Radford.

Mr. Boden and Mr. Huish prosecuted; and Mr. O'Brien defended the prisoner.

It appeared that on the evening of the 4th of April last, the deceased (Eliza Connor), imagining that she should be shortly confined, sent for the prisoner, who is a surgeon. On his arrival he examined her, and declaring that it would be a difficult case, returned to his house to fetch his instruments. He appeared rather in liquor. When he first entered the room, he partook of brandy. He used unnecessary violence, and had so little command over himself that he fell several times from his chair, and did so while he was operating with one of the instruments, which were of the ordinary description. He was with her nearly the whole of the night, but left her early the next morning, stating that the child would not be born alive. Though the deceased had not been delivered, and remained in a most critical state, the prisoner did not call again until the evening. At a late hour, Dr. Wilson, of Nottingham, was sent for, and succeeded in performing the operation without the use of instruments, but the child was dead, and from the first he gave no hope of the woman's recovery. When told that she could not continue alive very long, she said she was a murdered woman, and that it was hard to die so young. She died on Good Friday.

At the *post-mortem* examination of the body, Dr. Wilson said that such was the extent of the laceration caused by the use of the instruments, that it could only be the result of gross carelessness or ignorance.

The jury, after two hours' deliberation, returned a verdict of guilty, recommending the prisoner to mercy.

He was sentenced to twelve months' imprisonment.—*Morning Star.*

The malpractices of legally qualified, diplomatised, college-examined men are becoming more and more frequent: even the moral turpitude of the Watters' gang, vile as their conduct has been, sinks into comparative insignificance to the cases we have the sorrow, from time to time, to bring before our readers. Far be it from us, either to justify or extenuate the crimes of the Watters' gang: but this we must say, they never touched the life of an individual; their nefarious arts touched only the pockets of their too credulous applicants. On the other hand, we have the above example, which, for moral atrocity, far exceeds all we have yet published.

This Dan Gilpin Thackeray (of course a M.R.C.S.L., a man of fifty years of age, consequently one may infer of long practice) was sent for to attend upon Mrs. Eliza Connor, in that capacity which must naturally require the most delicate attention, so that at any rate female modesty may not be violated, nor unnecessary pain inflicted during the time of "nature's sorrow." Yet this (we blush to call) man waited upon the patient in a state of drunkenness, asserting the case would be a difficult one, though too drunk, apparently, to form a correct judgment, and fetched the instruments used in difficult cases. In this drunken state, he commenced to use the instruments with (to use the mild term of the paper) unnecessary violence. We will leave our fair readers, their husbands, or brothers, &c., to picture to themselves what amount of care is required in such cases, and what egregious and violent blunders must be committed by a man so drunk as to be incapable of even sitting quietly on his chair, and during the performance of the operation falling several times from it, and not only this, but prolonging the intense sufferings of the poor woman during the greater part of the night; and having just sense enough left to know that he had killed the child, he might well say, on leaving, that the child would not be born alive. Thackeray, upon leaving, promised to call the next morning, but never made his appearance till the evening, knowing, or at least he ought to have known, that his patient's position was most critical. "O, Heaven! a beast that wants discourse of reason would have known better." Dr. Wilson, of Nottingham, was then called in, delivered the patient (mark, without the need of instruments, therefore there was no malformation of the parts), but gave no hope of Mrs. Connor's life. Husbands, fathers, brothers, what would have been your feelings to have heard her poignant exclamation, "IT WAS HARD TO DIE SO YOUNG."

It would have thrilled through your nerves like an electric shock. Awake, awake up to common sense, provide yourselves, especially my fair readers, with Dr. COFFIN'S little Treatise on Midwifery, which by studying and remembering the precepts there inculcated, will teach you all that is necessary, and show you that the Great Creator ordained the bringing forth children, not as a mystery, but as a natural occurrence, and that every provision is made for the safety of the mother and dear offspring; and though the pain suffered for a time is generally excruciating, still the rigidity of the parts is absolutely necessary for the preservation of the health of woman, and without which no comfort, ease, or happiness could be enjoyed by her throughout life. Dr. Wilson states that the laceration caused by the instruments (or rather the drunken imbecility that used them) was to such an extent that it could only be the result of gross ignorance or carelessness. Well might poor Mrs. Connor exclaim, "I AM A MURDERED WOMAN!"

The very enlightened jury, after taking two hours to deliberate upon that which was made so clear in the evidence, returned a verdict of guilty of manslaughter; and (nay, start not, reader) recommended the prisoner to mercy. Could any of these tender-hearted jurymen be husbands or fathers? we should almost query whether they had ever been sons! Recommend the prisoner to mercy! For what? Was it, we ask, because he was drunk when he committed the crime? We hold that drunkenness is no excuse for crime, and the criminal while under the influence of drink ought to be as much under the law as a sober man; for a man who willingly and designedly gets drunk, it being his own act and deed, ought to be responsible for any crime he may commit in that state.

It was unfortunate for the murderer Cook of Leicester, or Gleeson Wilson of Liverpool, or Palmer of Rugeley, that they had not this tender-hearted, this benevolent-minded jury to determine their cases, else possibly we should have heard of their being recommended to mercy.

The sentence was twelve months' imprisonment.

We would humbly ask Chief Justice Erle, Which is the greatest crime, aggravated manslaughter, or obtaining money under false pretences? Yet the Watters' gang was sentenced to eighteen months' hard labour (by-the-by, they richly deserved three years), while this Thackeray

receives only one year's imprisonment. Truly this is in an inverse ratio, and were we to carry the principle further, we must come to the following conclusion, that the greater the crime the less the punishment. Oh! husbands, if you love your wives; fathers and mothers your daughters; if you will employ a legally qualified medical man in such delicate cases—be well assured of the morality of his character and his skill in the profession. But we aver that in nine hundred and ninety-nine cases out of every thousand a man-midwife is needless; and, in conclusion, again we say, Get Dr. COFFIN'S Treatise on Midwifery, and no such murdering results as the above will or can take place.

ON THE PSEUDO-SCIENCES.

(Concluded from page 255.)

THERE may be, and doubtless are, many other specific sources of error in scientific observation than those now alluded to; but all the general causes are, we think, here embraced; and if the reader were to carry out their spirit and real application, either in the investigation of original subjects, or in testing any doctrines, systems, or opinions which may come in his way, there would be very much less error in the world in a few years than at present exists. He would neither use nor admit the usage of words whose meanings were not accurately defined and fixed; he would argue about things, and not names, and would not substitute conventional phrases for absolute realities. He would receive nothing on the testimony of another which he could not prove himself; or in receiving or observing evidence, he would reason logically; he would not admit incorrect data, or be satisfied with a logical argument from premises which he had not tested. His observation would be complete and accurate; and thus, in such an exercise, would he gain greater power for further observation. Satisfied with those mental endowments which his Creator had given him, he would seek a high culture and a legitimate use of them, casting away all dealings with the marvellous, and looking suspiciously, rather than otherwise, at anything bordering upon the miraculous. He would not tamely follow a leader because others did, or pin his faith to this or that opinion because of the prestige of names or dates, or the fascination of novelty; nor would he, with a vaulting ambition, seek to be a leader where he had not the power to command respect and the genius to direct opinion.

Without the bombast and parade of assumed authority, his opinions would be quietly, but nevertheless powerfully, expressed; and, aided by truth, they would work like the "little leaven" influencing society, first in small and then in large masses, until the sphere, in whose centre would be placed the light of all truth, from which the divergent radii, spreading to the distant circumference, would dispel the darkness of the night of ignorance, and introduce to all mankind the daylight of eternal truth.—BOON HAYES.

We have now finished our somewhat lengthy subject of the Pseudo-Sciences, and shown the absurdity of the prevailing scientific fallacies of the day. We have, we trust, satisfactorily proved the utter error of table-turning, rapping, &c., so far as supernatural agency is its cause. We have exposed the errors of homœopathy, and demonstrated the absurdity of phrenology, furnishing such examples of each that will enable any one to meet the professors of each pseudo-science and vanquish them in fair argument.

Let Dr. COFFIN'S principles and practice of his Botanic System of Medicine be put to the like tests, as recorded in these series of articles, and it will be found to stand the test, because his system is based upon the simple laws of eternal truth, its leading principle being to assist the efforts of nature to expel disease instead of smothering her exertions in the pool of poisons and depletion.—*Ed.*

CHANGE OF AIR AND SCENE.

A MAN can scarcely be in a state of such perfect health as not to be benefited by change of air. It is *necessary* for every man. The workman must leave his workshop, the student his library, the lawyer his office, or his health will pay the penalty; no matter how great his temperance in eating or drinking; no matter how vigorously he uses his limbs; no matter how open, and dry, and cool, may be the place in which he is employed.

Dividing air into that which is moist and warm, and into that which is cold and dry, its action on the *healthy* body may be said to be this: the air, of which moisture or warmth (one or both) are the especial characteristics, excites the action of the skin and of the liver, and produces a more or less relaxed state of system. The air, which is characterised by coldness and dryness, excites the organs of respiration, and promotes the amount of their secretions.

The influence of the air on disease may be in part gathered from the above. It well deserves mention, because it is an agent, the application of which requires care and judgment. The influence of change of air on disease is well known to be great; but it is not so well known that, given in one way, it does harm; in another, it does good; in another, is inert and useless.

The man labouring under indigestion (the effect of sedentary habits and repletion) would probably be injured by a removal to a warmer and moister air than that to which he had been accustomed, but would be benefited by a change to an air colder and drier than his own. The irritable sufferer from dyspepsia, the result of deficiency of proper nourishment, or of powers too languid to convert his food into blood, would probably be deprived of life by a removal to a colder and drier air, be restored to health by a change to one warmer and more moist.

In proportion to the weakness, the irritability, the sensitiveness to every impression; in proportion to the degree of mental *excitement*, ought the change to be to an air which is softer and warmer.

In proportion to the strength of the body, the lethargic state of its powers, the dull condition of its sensations; in proportion to the mental *despondency*, ought the change be to an air which is drier and more cold.

There are states of highly irritable system, in which almost any kind of food is felt by the stomach, and gives it uneasiness, or in which a little dust floating in a room produces a fit of coughing; or in which breathing a colder air than usual produces the same effect—the cough being dry and almost *tinkling*; or in which the gentlest aperient produces pain, and, perhaps, diarrhœa; or in which the most common domestic occurrence vexes and annoys. Any such state will probably derive advantage from a mild, soft air, and would probably be injured by an air of a different kind.

There are states of system in which there is excessive languor and relaxation, in which the stomach, so far from feeling almost any kind of food, is hardly roused into action by spirits or condiments, in which the strongest and most drastic cathartic seldom produces even uneasiness; in which severe domestic trials hardly produce even a temporary impression; in which secretion is free; in which, if there is cough, it is loose and unirritating. Such a case would probably be injured by the relaxing and soothing effects of a soft, warm air, but would derive benefit from an air at once dry and somewhat cold.

Again, change of air, to be of service, should be well timed; and should, if possible, be obtained in an early period of a chronic and lingering disease, and not be deferred longer than can be avoided in convalescence from active or inflammatory affections.

Again, the more impure and close the air has been to which the person has been accustomed, the more cautious and deliberative should be the change; but the more imperatively is such change called for.

Again, the younger the person, the *greater* the benefit to be derived from a change of air, and the more necessary and advisable will such change be.

Upon these a few observations may be useful.

If a man finds himself attacked with a disturbed state of his digestive or biliary organs; and if such state should not speedily yield to regulated diet and exercise, and the usual medicaments, let him not waste his days and weeks in *trying* this or that thing, or trusting to the beneficence of nature, or the *strength* of his constitution; but let him try what *judicious* change of air will do for him.

If a man is attacked with shortness of breath, cough, and irritation about his respiratory organs; and if urgent symptoms are relieved; or, *better still*, if they

have not yet come on; let him try the effect of change of air. In cases of this kind, delays are not only dangerous, but often fatal.

There is no time at which a man is more apt to contract organic or structural disease, than immediately after an active disorder has subsided, during his debilitated convalescence. A *judicious* change of air, as a means of accelerating his restoration to health, as a means of lessening this risk, is invaluable; and, where it can be accomplished, should never be neglected.

The *young*, whether well or ill, are always advantaged by change of air. If brought up in a large town, an occasional change to the air of the country is almost necessary to give them strength and sound health, and should always be contrived by parents when at all in their power. After an illness change of air is almost necessary to the young invalid. Many children, I am satisfied, fall into permanent and incurable disease, who would at once have recovered had this been attended to.

Change of air ought, however, in most cases of disordered health, to be had recourse to only under the especial advice of the medical attendant. All that I would imply by the above remarks—all that they have been written for—is simply this: it often happens that a man feels unwell, yet would at once reject the idea of applying for medical advice, although, if change of air were suggested to him, he would unhesitatingly try its effects. It often happens that medical men feel change of air to be advisable, yet do not say so, from a fear lest the proposal should only distress the patient by telling him of a remedy which is beyond his reach. It not unoften happens that patients, or their friends, get false ideas into their heads, and, among others, fancy that change of air is always ordered as a forlorn hope, or as the last remedial means left to be tried. It is *chiefly* for the benefit of such cases that the above observations are intended.

The change of air which, in cases of *comparative* health, I would especially advise, is that embraced in constantly moving from place to place, taking as much personal exercise, during the journey, as is found to be possible. I have often been struck with the fact, that an Englishman will unhesitatingly set off to the Continent; go among a people whose language he is perhaps quite ignorant of; whose habits are quite foreign to his own; whose houses are, except in great cities, such as to disgust him; whose style of living is such as to make him almost loathe the sight of food; whose country is probably not comparable to some parts of his own; yet he will, at considerable expense, transport himself there. For what purpose? To set out on a pedestrian tour with a stick and a bundle—an undertaking which he could more cheaply, more improvingly, and with evidently greater advantages, and probably with quite as much benefit to his health, have performed at home; or he does this to bathe in *thermal springs*, which are probably not better for his case than those of Buxton or Bristol; to drink *salines*, possibly not equal to those of Leamington or Cheltenham; or *chalybeates*, perhaps not better than those of Tunbridge Wells; or *sulphurated waters*, not comparable to those of Harrogate. It is very well to say to the man of wealth and independence, "Oh, sir, medicine is really not calculated to effect your cure. Get together your travelling suite, your carriage, and your servants, and go to the continent, and visit the 'Brunnens of Nassau,' or the 'Tyrol,' or the south of France, or Rome, or Naples." But this sort of advice, to the great mass of the people of Great Britain, even of the middling classes, is only like filling their hands with water, which, thirsty though they be, is never to reach their lips; or suspending viands before their eyes, which are destined for ever to elude their famishing and eager grasp. Let me say to such (and it is an advice which would be re-echoed by every medical man in Great Britain), "You have little cause to envy your wealthier brethren their unbounded freedom of far and wide migration. To taste all the pleasures which the best and most healthy of all kinds of travelling affords, you need not leave your native land, but, with some shillings or pounds, according to your means and your expectations, and a bundle, containing a change or two of linen, and an extra

pair of shoes, hung over your shoulders by a stick, you may wander over the Highlands of Scotland, over Cumberland, or Westmoreland, or Wales, or last, but not least, Derbyshire; and with a thorough British feeling, expressive of the words, 'This is my country,' admire the beauties of the woods and plains, the grandeur of mountain scenery, be warmed into a taste for the sublime and the beautiful, by seeing Nature in all her inimitable, unartificial, and untouched freedom, and by seeing her decorated, and made more useful, by the hand of man; and you will, after a ramble of weeks or months, as may be, return to your home with the feeling, that what travelling and change of air and scene could do for man's health, it has done for yours."

It is this sort of travelling, this total removal from ordinary and every-day habits, this constant exercise; this continual change of air, which does most good, that, if the man is in moderate health, gives vigour to his system, freedom to his limbs, and clearness to his mind, which will, like magic, uproot many a case of long-continued dyspepsia, and cause many a chronic disease, threatening to degenerate into something worse, to be no longer felt.

Change of air may be too great; but it cannot be too frequent, if the powers of the system are not materially impaired.

In many, the majority of cases of indigestion, the spirits are either very much depressed, or the mind is in a state of highly morbid irritability. There are few diseases in which the remarkable sympathy which subsists between the body and the mind is so clearly seen as dyspepsia. The consequence of this sympathy is, that the patient looks at everything in the darkest and blackest light; magnifying trifles into affairs of moment; is tormented with a constantly cavilling, wretched sensitiveness. It is necessary, then, not only that the body should be exercised and its muscles actively used—not only that the stomach should be as little distressed by work as possible—not only that change of air, frequent change of air, should be enjoyed—but it is necessary, moreover, that the mind should be taken away from its cares and troubles, from the customary sources of vexation, and be amused with variety, without knowing how—an amusement which is well furnished by the fresh scenes, the fresh faces, and the various and numberless interesting matters for observation, that a tract of country before unknown to him must ever present, even to the commonest observer.

Travelling, and especially pedestrian travelling, presents, among its many other points of excellence, this in a remarkable degree. It acts directly on the mind as well as on the body. I am satisfied that if the measure were tried in cases of hypochondriacism, in cases of incipient insanity, many a one would be restored to his reason, his family, and his friends. The effect of such travelling cannot be sufficiently estimated. It would enable many an invalid, at a cheap rate, to show "clean bills of health." I think few will say the prescription is not palatable.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

ANATOMY.

(Continued from page 246.)

BONES OF THE LOWER EXTREMITIES.

EACH lower extremity is divided into three parts, the thigh, the leg, and the foot, to which the patella or knee-bone is added.

The femur, or thigh-bone, is the single bone by which the thigh is formed. It is a long, cylindrical bone, situated between the pelvis and the leg; its head is received into the acetabulum (saucer), and has a small depression in the middle for the attachment of the round ligament. The neck, which is between the body of the bone and its head, is rough, and gives attachment to the capsular ligament. What is called the great *trochanter* of this bone is a large, unequal eminence below its neck; and then there is another named the small trochanter. The body is smooth and convex before and hollow behind, where there is a rough line called linea aspera.

The leg consists of three bones; the tibia, the fibula, and the patella. The tibia is a long, thick, triangular and cylindrical bone, placed between the femur and the tarsus (instep), in the fore part and inside of the leg; it is thickest at its upper extremity. Its fore ridge or angle is called the spine or shin; at the lower end of this bone a considerable process is found which forms the inner ankle. The fibula is a long bone situated at the outer part of the leg, by the side of the tibia; the process at the lower extremity forms the outer ankle; it is connected to the tibia by a ligament.

The knee-pan is a small, triangular, spongy bone, situated between the interior extremity of the thigh-bone and upper part of the tibia; it is connected to the femur and to the tibia. The foot-bones are distinguished into three orders; namely, the tarsus (instep), metatarsus (between the tarsus and toes), and toes. The tarsus consists of seven small bones placed between the leg and metatarsus; they are called astragalus, calcis, navicular, cuboides and three cuneiformia or wedge-shaped. The astragalus is the upper bone of the foot; it is large and articulated both with the tibia and the fibula, supporting the tibia and being supported itself by the calcis. This last is of a very irregular figure, and is the largest bone of the foot. Behind it is formed into a considerable tuberosity called the heel. On the internal surface of this bone there is a considerable sinuosity which affords a passage to a tendon, and to its hind part a very strong tendinous cord is attached called the tendon of Achilles. The navicular is concave at its hind part, so as to receive the astragalus before it is connected with the cuneiform bones, and sideways with the cuboides; which last, as its name imports, is of a cube shape and is connected with the heel-bone; it also supports the two last bones of the metatarsus and joins the third cuneiform and the navicular bones.

Each of the cuneiform bones resembles a wedge; they are placed next to the metatarsus, are united to the navicular bone, and support the three first metatarsal bones. The whole of these bones in connection form the upper part of the foot; the masses being convex above and concave below.

The metatarsus is composed of five bones: the first of these, which is much larger than the rest, supports the great toe; the others are pretty nearly alike in size and correspond with the other toes; the junction of them all being at one end with the cuneiform bones and cuboides, and at the other with the toes. The bodies of these bones are somewhat triangular.

The toes consist of three bones each, excepting the great toe, which is made up of only two. The three bones are called phalanges.

There are several bones called sesamoid occasionally found among the toes, and are usually situated on the joints of the great toe, about the size of a small pea.

(To be continued.)

DIET AND REGIMEN.

(Continued from page 258.)

GELATIN is in general of easy digestion, and the stomach which is labouring under mere debility, as during convalescence from severe and exhausting illness, will usually find jelly from calves' feet, ivory dust, &c., a grateful and palatable, a safe and unirritating step from farinaceous to more solid animal food. But this remark

is hardly applicable to the dyspeptic stomach, to the stomach which, if suffering from debility, is seldom suffering from debility alone. When the gastric secretions are deficient or disordered, when the stomach is irritable, or when it is, perhaps, suffering from chronic inflammation, I think jelly will usually be found to be objectionable. I must say that I had rather, speaking generally, see a dyspeptic patient of mine eat a somewhat underdone broiled mutton-chop, than jelly of any sort, made in any way, or from any source.

It seems necessary to direct attention to fatty matters, which are placed lowest in the table and marked very indigestible; and by this term is meant not merely fat, but likewise skin, cellular membrane, &c. Fat affords very much more nutriment than does lean, if it be digested; but it matters little what a man eats, or how much nutriment his food may contain, if that food is not assimilated—if it is not formed into blood.

FISH.

1 *Whiting*
2 *Haddock*
3 *Cod*
4 * *Flounders and Soles*
5 * *Lobsters and Crabs*
6 * *Oysters, raw*
7 * * *Fresh-water Fish in general, as Trout, &c.*
8 * * *Turbot*
9 * * *Salmon*
10 * * *Oysters, cooked*
11 * * *Herrings and Sprats.*

Taken in the aggregate, fish may be thus classed in the order of their digestibility: — White-fleshed fish, flat-fish, shell-fish, fresh-water fish, red-fleshed fish, and, lastly, herrings.

Fish, at least those which are *unmarked*, if simply boiled and eaten only with salt, and little or no butter, are of very easy digestion; but if they are salted, or fried, or eaten with rich sauces, they are so no longer.

Oysters are usually thought to be of easy digestion. I have been led to form an opposite opinion. I think even raw oysters questionable, if the stomach is much out of order; but cooked oysters are anything but easily digested, and they should be shunned by every *valetudinarian;* for there is scarcely a disease which flesh is heir to, with which the stomach does not sympathise, and which is not in imminent risk of being made worse by a fit of dyspepsia.

Another important article of diet to be spoken of under the head of animal substances, is milk, which, of all kinds of animal food, seems to be the one which is the most *natural*, and therefore would, *a priori*, strike the mind as being the one most likely to be easily digested; and it does agree with the stomachs of most men, its use being attended with only one inconvenience, and this does not by any means always apply. It often, if regularly used, constipates the bowels, and thus deranges the process of digestion. This is far less likely to happen, if the milk is thickened with flour or oatmeal; and then it forms a diet which most people like, and which is very generally wholesome. Milk is, of all kinds of food, the one which is the best adapted to children; and it should constitute their principal meal, which, in the child, the boy, the youth, and the man, ought to be the *breakfast*. But of this more hereafter. There is a saying very prevalent in Derbyshire, that "cream is lighter than milk;" implying that it does the stomach less harm, and is more easily digested, because it swims on the top of the milk. To whose strange abuse of the meaning of the word *light* the public is indebted for this singular "saw," I know not. If it were true that the more specifically light the substance, the more easy is it of digestion, butter, or fat, or oil would be more easily digested than would water. I should scarcely have noticed this strange doctrine, had it not been for the personal knowledge which I have of its extreme prevalence in my own neighbourhood, and had I not seen repeated instances of its injurious consequences. Cream is, then, much more indigestible than milk, and is, probably, in this respect, but one remove from butter. The following scale will, perhaps, show more clearly the relative digestibility of milk and its products:—

1 *Whey*
2 *Milk, skimmed*
3 *Milk, unskimmed*
4 *Cream*
5 *Curds*
6 *Butter*
7 *Chesse*
8 *Cream-cheese.*

Need I say that butter is irritating to

the stomach of the invalid, is poison to that of the dyspeptic. It is the arch-demon, with which all writers on dietetics have warred; it is the thing with which invalids seem to be least able to dispense, and yet it is the thing which, perhaps, does them most harm. If eaten at all, it should be eaten sparingly, and cold. Melted butter, whether on toast or in sauces, should be banished from the table of every valetudinarian. I have, however, known instances of people who have hardly ever *felt* that they have such a thing as a stomach, in whom butter acted as a gentle laxative, and to whom it proved serviceable. Children should not be allowed to eat butter. Indeed childhood is the age at which a rigorous attention to dietetics is most imperatively called for, both as the means of warding off the diseases of early life, and mitigating their severity when they do occur, and as the means of laying a foundation for temperance in after life.

Cheese is generally very difficult of digestion. The impunity with which most persons can eat toasted cheese may probably be attributed to the great quantity of mustard which is usually taken with it. Decayed cheese is so notorious for the soothing effects which it produces, when taken as the climax of a *dinner*, that, if unnoticed, it may be thought by some to contradict the assertion, that cheese is difficult of digestion. Decayed cheese has, in fact, ceased to be cheese properly so called; it has to a considerable extent undergone decomposition, and has become a decided stimulant, which may be considered to exert much the same effect on the stomach as spices, or other stimuli: in fact, I have seen cases in which it has produced considerable irritation in the stomach and bowels. But if people will eat to repletion; if their insatiate cravings and *gourmandise* will roam from soup to fish, from fish to meat, from meat to poultry, from poultry to game, from game to confections, more than one stimulus is necessary to goad the stomach into an effort powerful enough to concoct the heterogeneous mass; and, as one of these stimuli, decayed or decaying cheese is probably almost as harmless as any other.

The last of the articles of animal food which I shall mention is the egg. An important feature in every cookery-book, it is little less important in a work on diet. The *yolk*, although it contains an oil which might have been thought likely to disagree, very generally suits the dyspeptic stomach; *if lightly boiled*, its digestion is hardly ever *felt*. Not so the *white*, which almost always irritates and does mischief to the disordered stomach, and by the dyspeptic or the invalid it should not be eaten. The same observations to some, but not to an equal extent, apply to eggs when looked upon as forming part of a pudding; the yolk is still the part which is most easily digested—the white that which is most likely to disagree; but the latter is certainly not so likely to prove injurious as when eaten alone, and unmixed with other things. There is one other important, because practical, fact, which must be mentioned: the albumen, or white of eggs, eaten raw (that is, uncoagulated), is very much more digestible than that which has been boiled, and therefore previously coagulated or hardened. It is, of course, coagulated by the juices of the stomach; but, why we know not, that coagulation does not offer the same degree of resistance to the solvent powers of the stomach as the coagulation does which is produced by heat, or otherwise, out of the body. The practical deduction from this fact is, that a raw egg is not liable to the objections, on the score of its digestibility, that a boiled egg is liable to; on the contrary, it would seem that there are few articles of diet which are so quickly or so easily digested as uncoagulated albumen.

The second great division of the articles of food, i. e., vegetable substances, is now to be discussed.

GRAIN.

1. *Wheatflour*	4. *Oatmeal.*
2. *Rice.*	5. *Barleymeal*
3. *Rye.*	6. *Peameal.*

Of these, only the first three are much used in England: the last three are more in request among our countrymen north of the Tweed than with us.

Bread made from wheaten flour is decidedly more nutritious, as well as more digestible, than that which is made from the flour of other grain; and it is the more digestible the more thoroughly it is baked,

without being burned, and the more completely the steam is allowed to escape from it while it is baking. For these reasons ship-biscuit is so very easily digested; for these reasons bread made in *small loaves* is more digestible than that when made in *large loaves;* and bread baked in large brick ovens is more digestible than that baked in the small iron oven which is attached to the modern range. In fact, if the oven is small, or the loaves large, several of the products of fermentation are confined in the bread, and add to the difficulty of its digestion. For these same reasons, toasted is more easily digested than untoasted bread; stale bread is very much more digestible than that newly baked. Bread made from *all* the wheat-grain, including the *bran*, is much praised by some on account of its laxative effects; but the greater number of dyspeptics will find it irritating, and productive of more pain and uneasiness than advantage: still there are doubtless many, very many, cases with which it agrees, and to which it is of service; but these are not cases in which the stomach or intestines are in a state of morbid excitement.

Pastry is so generally known, so generally felt to be injurious to the weak or the disordered stomach, that in a work on diet its mention is almost unnecessary, only that the omission might possibly be attributed to carelessness or neglect. Pastry, inasmuch as it contains much fat, butter or grease, of one sort or other; inasmuch as it contains sugar; inasmuch as it is generally eaten as a supernumerary and therefore superfluous article of diet; inasmuch as it, by variety, often tempts to repletion and overloading of the stomach—ought to be discarded from the table of the man whose digestion is either debilitated or deranged. But if the man is in a state of moderately good health, and yet his occupations are not so laborious as to render a full meal of animal food either necessary or proper, simple pudding, or even very commonly made pastry, is to be advised rather than otherwise. It may be further observed, that children do not require, and indeed, unless habit has vitiated their appetites, do not usually like much animal food. Simple puddings, such as those made of rice, or sago, or the common batter pudding, or, to be used more sparingly and less often, even those made of recent or preserved fruits, surrounded with a very common and plain crust, are much to be preferred, as the basis of their dinner, to the daily increasing practice of loading children's stomachs with animal food, for which they have a natural distaste, and which, so far from being of service, is generally injurious to them.

Rice is a most easily digested article of diet, one which is light and unirritating, and one which, if its insipidity is relieved by the addition of milk, or preserved fruits, or if taken instead of vegetables, furnishes an agreeable change and palatable resource to the invalid.

The oat must be mentioned, as furnishing us with the kind of food which is, beyond all doubt, the most easily digested, and which, let the stomach be in what state it may, if it can but retain, it almost always digests: I mean gruel. This is made from grots (which are oats freed from the husks) and from oatmeal. It matters very little from which of these the gruel is made; the great object is to have the gruel thoroughly *boiled*. An hour is little enough time for the complete cooking of the meal or the grots. If made from grots, they ought to be carefully separated from the gruel by straining, and they ought *never* to be *eaten*. Barley-water ought likewise to be noticed as being the best of all diet drinks; one which agrees with almost every one; one which, in cases of irritation of the lining membrane of the stomach or the bowels, or where the gastric secretions are acrid, is most useful in soothing the irritation, and in defending the stomach from its vitiated juices. Nor is either gruel or barley-water so destitute of nutritive powers as is commonly supposed. An invalid, using little or no exertion, and with debilitated powers, would hardly, or in very rare instances, digest every day, and assimilate, more nutriment than is contained in between a pint and a quart of gruel; and, as Dr. James Johnson remarks, in decidedly the best work that has ever been published on indigestion, "no person is in danger of starvation who can take a pint, nay, only half a pint of good gruel in the twenty-four hours."

(To be continued.)

ON THE USE OF FLANNEL.

When flannel is worn next the skin, it is almost invariably the practice to keep it on by night as well as by day. This is not only unnecessary but injurious. The chief advantage of using a flannel dress next the skin, results, not from the actual warmth imparted or retained (an effect which might be obtained to an equal extent by an increase of outward clothing), but from the uniformity of temperature thus ensured to so large a portion of the surface of the body, and the tendency which this has to keep the highly important, but too much neglected, functions of the skin in an active and healthy condition. During the day, the frequent and oftentimes sudden, vicissitudes of our climate, are such as to render the effects of flannel, in preserving an equality of temperature, most valuable. But at night, and during sleep, we are subject to no such vicissitudes; consequently, the same necessity for the use of flannel does not then exist. But while the use of flannel at night thus appears to be unnecessary, there are several considerations which show it to be injurious. These considerations regard both the condition of the body and of the flannel itself. Whatever the wants of the body for warmth during the night may be, they are, in general, fully supplied by the bed-clothes in ordinary use. The body requires no extraordinary warmth during sleep; on the contrary, there is at such times even a tendency to an increase of the natural warmth. When to this natural tendency, the heat caused by flannel worn next the skin is superadded, the effect is to keep the skin in a state of considerable excitement, and to induce perspiration, more or less profuse. These effects are not calculated to prepare the body for enduring the vicissitudes of the ensuing day, but rather to render it more susceptible of injury.

J. STEPHENS,

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NOTICE.

Dr. COFFIN may be consulted gratis, as usual, every Saturday evening, from four to eight o'clock, at the Botanic Establishment, No. 24, Union-street, East, Spitalfields. *Patients not admitted to the waiting-room after eight o'clock.*

Dr. COFFIN may also be consulted at his residence, 24, Montague-place, Russell-square, daily *(Sundays excepted)*, from one to two o'clock (fee one guinea), on any day except Monday, on which day the fee will be five shillings only.

Advice gratis, every morning, from ten to one o'clock, at the establishment, No. 134, High Holborn, nine doors from New Oxford-street, nearly opposite the London and Westminster Bank, Bloomsbury Branch.

Dr. COFFIN may likewise be gratuitously consulted at his Agent's, Mr. T. Bean's, No. 7, Bridge-house-place, Newington-causeway, on every Monday evening, from half-past six to nine o'clock, and on every Thursday morning, from nine to one o'clock.

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G. CALDWELL,

Surgeon and Practitioner of Medical Botany, Proprietor of the Botanic Dispensary,

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NOTICES TO CORRESPONDENTS.

Mr. CALDWELL'S communication, received too late for the present number of the Journal, shall appear in the next.

All letters should be addressed, "To the Editor of the Botanical Journal, 134, High Holborn."

The Botanical Journal and Medical Reformer is published Fortnightly, at No. 134, High Holborn, London, where all orders must be addressed.

COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 294.—Vol. IX. SATURDAY, AUGUST 20, 1859. Price 1d.

DR. COFFIN'S LECTURE AT DERBY.

Dr. Coffin, of London, gave an interesting and instructive lecture to a highly respectable audience in the Temperance Hall, on Tuesday evening, the 2nd inst. For the space of one hour and forty minutes the lecturer held the attention of his audience, who evinced their delight and satisfaction by frequent applause. In consequence of J. A. Warwick, Esq., being called out of town on important business, Edward Clayton, Esq., was called to the chair. After a short address by the chairman, Dr. Coffin rose, amid loud cheers, and gave an interesting description of the rise, progress, and success of Medical Botany in England. In contrasting allopathy with Medical Botany, he showed very clearly, by simple and logical reasoning, the fallacy of bleeding, blistering, and giving poisons to cure disease. At the close of the lecture Mr. Ford proposed, and Mr. Garlick seconded, the following resolution:—"That this meeting desires to express its grateful thanks to Dr. Coffin for introducing his system of Medical Botany into this country, and for his persevering and untiring exertions in making known and establishing the same, which, under God's blessing, has hitherto proved, and will continue to be, a signal benefit to mankind." After a vote of thanks to the Chairman, the meeting separated.

THE GLEANER, No. 40.

MEDICO-LEGAL EVIDENCE IN CASES OF INSANITY.

"It is our duty," observes Dr. Winslow, "to recognise no form of mental unsoundness which is not *positively the product of disease.* No notion of the mind, however ridiculous, illogical, fallacious, and absurd, should be permitted to be a delusion or evidence of unsound mind, unless it be obv ously and unmistakeably the product of a diseased intellect."

BLOOD-STAINS.

At a trial for murder, by a youth eighteen years of age, at Carlisle, Dr. Alfred Taylor's opinion upon the source and date of certain blood-stains upon the prisoner's clothes, &c., furnished a most important link in the chain of evidence. Dr. Taylor was enabled to distinguish old from recent blood-stains by their aspect, and the chemical detection of rust of iron mixed with the remains of blood on the blade of a knife. Microscopic examination showed the real nature of certain stains on the clothes, alleged to be caused by the blood of a cow, but which, from the size of the globules, were, doubtless, human blood.

POISONING WITH COLCHICUM.

Dr. Caspar relates that four men drank some colchicum wine, taking it for bitter *schnaps.* Profuse purging, pain in the abdomen, vomiting, prostration, were produced, and all died from the effects of the poison. The blood in all was dark-coloured and thick, the kidneys were congested, the bladders filled with urine. The brain also exhibited unusual fulness

of vessels. In one case the vessels of the stomach were extremely congested, and its inner surface presented scarlet patches of inflammation. In another the mucous surface was pale, while spots were found on its outer part. In the other two slight congestion was found, with traces of inflammation of the bowels. The gall-bladder was variously full, corresponding with the difference observed during life as to vomiting. Chemical analysis separated *colchicum* from the contents of the stomach and intestines, in about the quantity of from two-fifths to half a grain—a quantity supposed to have been sufficient to have caused the fatal result.

ON CHARCOAL AS APPLIED TO SANATORY PURPOSES.

Charcoal possesses a great power of absorbing gases and oxidizing them, which has recently been investigated and practically applied by Dr. Stenhouse, to the prevention and cure of disease.

The disinfectant power of charcoal is well shown in the following experiment:—"My attention," Dr. Stenhouse remarks, "was particularly drawn to the importance of charcoal as a deodorising and disinfecting agent, by my friend John Turnbull, Esq., of Glasgow, who, about six months previously, had placed the bodies of two dogs in a wooden box, on a layer of charcoal-powder of a few inches in depth, and covered them over with a quantity of the same material. Though the box was quite open, and kept in his laboratory, no effluvia was ever perceptible; and on examining the bodies of the animals at the end of six months, they were found to be in a very advanced state of decay. Mr. Turnbull sent me a portion of the charcoal powder which had been most closely in contact with the bodies of the dogs. I submitted it for examination to Mr. Turner, who found it contained comparatively little ammonia, not a trace of sulphuretted hydrogen, but very appreciable quantities of nitric and sulphuric acids, with acid phosphate of lime." Dr. Stenhouse performed a similar experiment on the bodies of a full-grown cat and two rats, which he allowed to pass through the various stages of putrefaction in his own laboratory, covered over with only about two inches of charcoal powder. No smell was perceptible, no inconvenience resulted; and, after about eighteen months, almost all the nitrogenous parts had disappeared, and nothing remained but the bones and a portion of the fat, which was also undergoing rapid decay. It appears, then, that charcoal, in addition to absorbing the emanations of putrifying substances, decomposes them, and rearranges the elements into forms perfectly compatible with health.

HOW TO NURSE SICK CHILDREN.

The untutored experience of nurses and mothers has hitherto been generally regarded as ample protection for the healthy or the sick child, and it is altogether a new feature of the present times that attempts are made to give to that experience a higher and a better character. Those only who have children of their own, or have watched them with parental love, can know the fund of knowledge to be gained from a study of their physical and mental development. The young mother, or the still younger nurse, is commonly supposed to understand the child's wants and habits intuitively, or by nature, and the consequence of such knowledge, or, rather, the want of proper knowledge, is, we fear to say how often, the source of a debilitated constitution, or death to the child—anguish and a murmuring spirit to the parent. Nor is the blame to be laid solely at the door of the young mother or the nurse, but rather at the door of those who, with knowledge at their command, have failed to communicate it.

The proper treatment of sick children is a want of great magnitude in society. To obviate such want is the object of this series of articles, mainly extracted from a writer, who is well acquainted with the subject here treated upon, and no mother or nurse will regret the time spent in reading and studying this series.

We commence with the necessary qualifications of a nurse: "If any of you have entered on your office without a feeling of very earnest love to little children—a feeling which makes you long to be with them, to help them—you have made a great mistake in undertaking such duties, and

the sooner you seek some other mode of gaining an honest living, the better. You may be very good and respectable women, and yet be very bad nurses. You may be feeble in health, and then you will be unable to bear the confinement and the fatigue of attending upon the little sick sufferers; or, you may naturally have low spirits, and a child's prattle, instead of refreshing, may weary you. Now, if any of these things really be the case with you, I would advise you not be a children's nurse.

"Secondly, there is a great difference, as you must know, between a child when well, and the same child when sick. When well, it is all life, and merriment, and fun; if a baby, springing in its mother's arms, smiling at everything, or ringing out its tiny laughter for very joy at being alive, or, if it is older, jumping about, running backwards and forwards, full of frolic, shouting aloud with gladness, or, in its more serious moods, playing with its toys with the drollest earnestness. Nothing is easier, with the most moderately good temper, than to attend upon it then; but, if illness comes, first the child loses its merriment, though it still shows, just every now and then, a sad attempt at playfulness, and then, as its illness increases, it grows more fretful —so fretful that nothing can go right with it. It cries to be laid down in its bed, and then, no sooner have you placed it there, than it cries to be taken up again. It is thirsty, and asks, or, at least, makes signs for drink; but nothing you offer pleases its taste, and it pushes away the cup, irritated all the more by what you have so kindly done to promote its comfort. For day and night this continues, but yet you bear it, losing your own sense of weariness in anxiety for the life of your little charge. At length amendment comes; but as the anxiety you had felt passes away, you are disappointed at finding that, instead of being more loving and more fond for all that you have done for it, the little one is more cross and fractious than ever, and it is only by degress that its childish ways come back to it, and that you discover that the illness did not destroy, but only took away, for a short time, the little loving heart."

Though I have spoken thus of all the difficulties from what you might have fancied were the pleasures of a nurse's occupation, yet there are great rewards attached to it. In the discharge of any duty there is an honest pleasure, and this pleasure is always in proportion to the difficulties encountered, or to the greatness of the good attained. The difficulties, you already see, are many; to feel that you have overcome them, that you have kept your temper when sorely tried, that you have watched most carefully when sadly wearied, that you have carried out all directions given you most faithfully, brings with it a sense of real satisfaction. But besides this, the delight of seeing a sick child recover, of watching all its little baby ways come back one by one, of feeling you have its confidence and love, for in spite of all their cross and naughty tempers, little children's love is not hard to win, nor hard to keep—this is a source of pure and daily-returning happiness, such as no other occupation brings with it, such as ought, I think, to make for you what a good man called music at midnight, and though there are some exceptions to it, yet very generally the parents' gratitude is not wanting, and a mother's blessing, whose heart you have made glad, is a blessing indeed, one which money will not purchase, one of which poverty and sickness and death itself will not rob you.

(To be continued.)

CURE OF NEURALGIA, SEVERE COLD AND FEVER.

TO DR. COFFIN.

DEAR DOCTOR,—Thinking you would feel an interest in anything that tended to prove the efficacy of your remedies over disease, I beg respectfully and gratefully to call your attention to the following:—

My wife, for some time past, has been unwell, suffering from neuralgia more or less; she has been under a course of medical treatment by one of the faculty and got better; but for the last few days has been suffering from a relapse, owing, I imagine, to her having taken fresh cold. About a week ago, she went on a visit to her parents, and it appears became so bad, that it was deemed unsafe to allow

her to return alone. Her father, therefore, accompanied her home, and immediately proceeded to call in the same gentleman who had previously attended her. When I got home, I found her very ill indeed; she had had fainting fits, and complained of pains in her limbs and a dull, heavy pain at the top of her head, accompanied by dizziness; her skin was dry and she was in a high state of fever. She had also been unable to open her mouth wide for a day or two, the cold having affected her left jaw. I felt angry that a doctor had been called in, as I had in the morning (Saturday), wished her to come and see you. I thought, however, as she had not done so, that I could have attended to her till Monday, and then have started her off to you. However, the doctor came and ordered her barley-water, sent her mixture and pills, and gave her instructions to apply a blister which he would send, to the back of her neck. As soon as I heard this I said, "She shall not have a blister applied if I know it." She had already taken some of the medicine and two of the pills, but I stopped this, and immediately set to work and prepared her some tea of yarrow and clivers, with cayenne pepper, and put a brick into the fire to heat for a vapour-bath. She felt faint and I gave her a small lamb chop (versus barley-water). When all was ready, I applied the bath, got her to bed, gave her some of the tea I had made, and the result was a profuse perspiration, instant relief, and a sound sleep. I gave her, during the night, a draught or two of the tea when she complained of thirst. In the morning, of course, she was better. I gave her a good breakfact in bed, made a little broth for her lunch, she ate a hearty dinner, and there was a healthy moisture on her skin all the day. I also prepared some medicine as follows, from the herbs I had in the house: yarrow, clivers, red raspberry leaves, centaury, and half a dozen bitter almonds, of which, I advised her to take half a wineglassfull three times a day, and to regulate her bowels by compound pill of aloes if necessary.

When the doctor came he was surprised at her altered condition; and of course attributed it to his own treatment (although he did not say so). He was, however, undeceived by being told that I had not allowed the blister to be applied, but had used the vapour bath instead; upon which, he desired my wife to tell me that I knew nothing at all about it. Thanks to you, doctor, I do appear to know something about it; and I should say, results ought to have closed his lips against such remark. I should have said that my wife is of an exceedingly delicate constitution, and I think, instead of extracting heat from the body by blistering, she required what was already in her to be equally distributed, and, if possible, more added. The remedies applied accomplished the desired object, I think, in a much more speedy and natural way than blistering would have done.

The medical gentleman objected to the great moisture on her skin and said that his medicine would have caused sufficient perspiration—if so, why did he order a blister? Surely both were not necessary, and I doubt if blistering would have effected equilibrium in the system: more likely would have caused a greater pressure to the part affected.

One of my children, a little boy, between six and seven years of age, was taken very ill yesterday evening. He had complained of languor all day on Saturday. Yesterday morning when he woke, he complained of pain in his chest. (He had had a few cherries, and these may have produced the pain.) When I saw him he was very pale, lips and cheeks, and there was a heavy sweat on his forehead and face. I gave him a pill (aloes). Shortly after he was sick. I told his mother to get him ready for a vapour-bath; I made some yarrow tea; administered both when ready, and he was very soon in bed and asleep. I also made some medicine of what herbs I had in the house: red raspberry, clivers, yarrow, horehound and four bitter almonds. He drank freely of yarrow tea; I gave him a little of the bitters (aloes), and at dinner time he felt hungry, and seemed a great deal better. I gave him some dinner which he enjoyed. I repeated the bitters two or three times during the day. He was able to sit up and arouse himself towards evening and wanted to be dressed. I left him asleep when I came away to

business, and hope to meet him and the rest of my family as I return to-night. You see, I am getting quite a doctor. I am very thankful to you for writing your valuable works, four of which I possess; and think that I shall be able to keep out the doctors from my dwelling, by attentively following the directions you have so plainly given.

I must add, that I am doctoring myself also, and do not find it necessary ever to come to you now. I am getting along first-rate by using your remedies. I am satisfied that yours are Nature's remedies, sent by the God of Nature for the purpose for which you use them, and consequently, I believe they must be effectual. Let all praise be given to Him, whilst we seek to use the means He has appointed to restore and preserve the most valuable of his gifts—health.

My other little boy yesterday complained of pain in passing his water. I made him some tea of yarrow and clivers; and when I returned at night I heard that just before, he had voided a considerable quantity of urine, and immediately after he could skip and jump as heretofore.—Believe me, dear Doctor, your most obedient and grateful servant, J. H. Crane.

20, *Sussex Road, Holloway, N.*, 1859.

A CURE OF LIVER AND NERVOUS DISEASES.

TO DR. COFFIN.

Dear Sir,—I feel it my duty to return my sincere thanks to you for your great kindness and skilful attention to me, thinking it might be a benefit to others. I have addressed these few lines to you, feeling certain that I should have sunk under my diseases of the liver and nerves, especially as I have taken the prescriptions of medical men of reputed skill. At length I was persuaded to try your skill, which, I am most truly thankful to say, has done me so much good, that I have quite recovered, after all others failed. Thinking it may be a great benefit to others that, by trusting to the Almighty and placing confidence in you, and not to think, if they are worse while under your care, you are doing them no good, for that is a time they are getting better. If at any time I can benefit others by sending them to you, I feel it my bounden duty so to do. Allow me, dear sir, to remain your most humble and grateful servant, H. Roberson.

1, *Shoreditch, July 13th*, 1859.

ON MEASLES.

A CASE IN WHICH THE PATIENT HAS HAD TWO ATTACKS OF MEASLES.

Eleanor Duckett, aged about seven years, residing at Bath-row, Birmingham, seemed to her parents to be sickening from about July 15th, and continued daily to become more feverish, and at night was much disturbed in her sleep by alarming visions. This continued up to about the 19th, when a rash began to appear on her face and upper part of her body. This was accompanied by congestion and weeping of the eyes, and a sneezing and discharge from the nose, and by a hacking cough. On Wednesday, July 20th, I was called upon by her father to visit her, who said she had got scarlatina. On hearing of her symptoms, which were not very exactly described by her father, who had not entered very minutely into the particulars of his child's case, I asked him did he think it was measles. "Oh, no," he answered, "he thought that was not possible, for she had had measles when she was about two or three years old." I accompanied him to see her, and seeing the unmistakeable symptoms, I at once pronounced the case to be one of measles. The parents could scarcely think it possible, who both remembered her former well-marked attack of measles. I ordered the child herbal sudorifics, in order to throw the disease well out. These were prepared from pennyroyal, yarrow, and raspberry-leaves, a tea made from which she was to have freely, and of sudorific powders one night and morning, and a sirup of lobelia to relieve her cough. Her fever was very high at first, but under this line of treatment she was convalescent on Saturday, the 23rd July. I may just here say, I have lately attended many severe cases of measles, and pursued a course nearly similar to the above, and by so doing I have never had a fatal case. How different from the results of the allopathic or mineral treatment, which, according to the report of the mortality

of the City of London, in the *Times* of Wednesday, July 27th, there have been *seven fatal cases of measles*, whooping-cough, and croup, in the week ending Saturday, 23rd July. It would be well for the public if the faculty would pursue a simple and safe course similar to one I have just sketched; and if instead of using their so-called cooling method of treatment in these and other feverish cases, they were to copy nature and increase the fever until they succeeded in producing a free perspiration, they and the public would have to lament much less frequently *those unnecessary fatal* cases of *fever*. If the faculty will not have recourse to this salutary and wise course of treatment, let the public adopt it for themselves; and, to be able to do it, let every householder in England, who has the means, provide himself or herself with Dr. COFFIN'S "Guide to Health," and act in accordance to its instructions, and by so doing they will both save expense, and, what is more important, the lives of their children. Reader, be not deceived any longer by the nonsense of the faculty.

GEO. CALDWELL, M.R.C.S.I.

CUTANEOUS ERUPTION.

MRS. SHAKESPEAR, aged fifty, residing at Winsen Green, near the New Prison, Birmingham, applied at the Botanic Dispensary for advice for her complaint, a very widely spread and painful skin eruption, extending from the neck to between the shoulders. This was nearly one mass of sore, almost entirely stripped of skin, and where the skin was still adherent, it was separated from the deeper layers with a profuse discharge of irritating serum, so that it stood up in large bullæ, or blobs, or blisters. She applied for advice May 12th, 1856, and said she had laboured under it for eight months; in addition to this, she was affected by a continual noise in her head, like the rushing or boiling of water. Prior to her coming under the botanic treatment, she had been under the most esteemed homœopathic practitioner in Birmingham. She says she got no benefit under this system of trifling whatever, although it cost something considerable for the sugar of milk infinitesimals. When she came under the botanic course of treatment, she was altogether in a bad state of health; she continued under it from May the 12th, until June the 6th, 1856; she said she felt herself to improve from the very first; she rapidly recovered, and being cured she left off having medicine at the time mentioned above, and she continues quite well in every respect up to the present time, December 29th, 1858. Her treatment was a combination of tonic and purifying and corrective mixtures, prepared from nearly the following: quassia wood, burdock root and seeds, water dock, yellow dock, sassafras bark, mountain flax, centaury, agrimony, bogbean, clivers, woodsage and yarrow, and to a mixture, prepared as we do under a water-bath for condensing the steam, was added extract of taraxacum. She had also a lotion, which she was to keep constantly to the parts, and took, as a corrective to the general glandular system, compound lobelia pills, one after each meal: and so she was cured.

Reported by G. CALDWELL, M.R.C.S.I.

34, *Worcester-street, Birmingham.*

MUSCULAR POWER.

THAT contractile power which resides in the muscular or living fibre, is a phenomenon the most wonderful and perplexing of all. When we cannot reach the true point, the mind too often condescends to the most trifling pursuits; and so, when the older physiologists could not understand the intrinsic nature of this muscular power, they endeavoured to discover the size, the colour, and other external properties of the fibre; foolishly desiring to know what, if known, could be of no avail. Colour was believed to be essential to the constitution of a muscle; but in fowls, in amphibious animals, in fishes, in worms and insects, through all the gradations of animals of different species or different sizes, the colours of the muscular fibre change. In fishes and in insects, it is entirely white; even in the human body, it is not essentially red: the blood which makes the fibre red may be washed away. Then why should we define a muscle by that accidental property which it so often wants, and of which it may be so easily deprived, while we may define it more truly by its contractile power, the only evidence of its

nature, and its chief distinction in the system? for the contraction of the iris constitutes its nature: it is a muscle by truer marks than by its colour; and, by the same rule, the muscles of the least insect are as perfect as the muscles of a man.

Philosophers of the last age had been at infinite pains to find the ultimate fibre of muscles, thinking to discover its properties in its form; but they saw just in proportion to the glasses which they used, or to their practice and skill in that art which is now almost forsaken. Some found the fibres to be of one equal size in all creatures, however various; others found them proportioned to the size, or age, or strength of their subject; but even such discrepancies are trivial to those which, in one of the greatest of these minute philosophers, are found almost in the same page; sometimes affirming the ultimate fibre to be greater or smaller, according to the strength of the subject, and again making them of equal size, in the whale and in the insect.

Others, less troubled about the size of these ultimate fibres, had conceived notions of their form, which, in the credulity of the times, rose into the importance of doctrines, and, from the first raw conceptions of their authors, were finally proved by the microscope, forsooth; and while one author was drawing his rhomboidal fibres, all conjoined in regular succession, and another describing them also from the microscope, as consisting of six cylindrical fibres, involved in a spiral one, a third was reckoning the fibres as a succession of spherical bodies; and Cowper thought that he was injecting with quicksilver chains of bells jointed with each other. For the honour of the age, these vanities are forgotten now.

Physiologists have, by a late sense of their own weakness, been at last humbled to this becoming but unwilling acknowledgment, that this contractility of the muscles is an original endowment of this living matter derived from the Creator, imparted in a way which we cannot know, and so attached to the organisation of the muscular fibre, that where its organisation is destroyed, this power is lost. We have resigned the search after a mechanical or physical cause, and seek only to learn the properties of this living power, and the excitements by which it is moved. To this end it is necessary to define this power, distinguishing it from those feelings or motions which result from the nerves. The vis insita is that power which belongs to muscles, and is the source of motion. The vis nervea is that property which is peculiar to nerves, is the source of feeling, and the cause of voluntary motion, relating chiefly to the enjoyments and consciousness of life; for life and motion exist even in plants, and in many creatures, which not having nerves, have neither consciousness nor enjoyment, and in which the place of feeling is supplied by some analogous inherent power.

This irritable power, residing in muscles, may be defined to be the property by which muscles feel and re-act, upon certain stimuli being applied, and that, while certain orders of muscles are obedient to their own stimuli only, as the heart to the blood, the bladder to the urine, other orders of the muscles are ready to receive the commands of the will. And above all, so little dependant is this action upon the brain, that it is as perfect in animals which have no brain, and is for a time very perfect in the parts which have been severed from the systems to which they belonged. This power, inherent in the muscular fibre, belonging to its constitution, and not derived from without, is the vis insita or irritability of Haller, the vis vitalis of Goerter, the oscillation of Boerhaave, and the tonic power of Stahl. It is seen in the spontaneous and tremulous contractions of muscles when lacerated, as in wounds, when cut in operations, when entirely separated from the body, as in experiments upon animals, like that tremulous motion which we often feel in various parts of the body, without any evident cause, and independent of the will. Even when the body is dead to all appearance, and the nervous power gone, this contractile power remains; so that if a body be placed in certain attitudes before it be cold, its muscles will contract, and it will be fixed in that posture till the organisation yields and begins to be dissolved. It is the same inherent power by which a cut muscle contracts and leaves a gap. This is but a faint indication of that latent

power which can be easily excited to the most violent motions, and on which all the strength of the muscles depends; for the ligaments, tendons, bursæ of joints, and all those parts which have no such power, are capable of bearing the same weight when dead as when alive. But such is the dependance of the muscle on this vital endowment, that the moment it dies, its power is gone; and the muscle which could lift a hundred pounds while alive, cannot bear the weight of a few pounds when dead. This latent power may be brought into full action by various stimuli. The latent power itself is called vis insita, the acting power put into action; or the proof of the vis insita, upon applying stimuli, is called the irritability of muscles. This irritability is so far independent of nerves, and so little connected with feeling, which is the province of the nerves, that upon stimulating any muscle by touching it with a caustic, or irritating with a sharp point, or driving the electric spark through it, or exciting with the metallic conductors, as of silver and zinc, the muscle instantly contracts; although the nerve of that muscle be tied, although the nerve be cut so as to separate the muscle entirely from all connection with the system, although the muscle itself be separated from the body, although the creature upon which the experiment is performed may have lost all sense of feeling, and have been long apparently dead. Thus, a muscle cut from the limb, trembles and palpitates long after; the heart separated from the body contracts when irritated; bowels when torn from the body continue their peristaltic motion, so as to roll upon the table, ceasing to answer to stimuli only when they become stiff, and cold; and too often in the human body the vis insita loses the exciting power of the nerves, and then palsy ensues; or, losing all the governance of the nerves, the vis insita, acting without this regulating power, falls into partial and general convulsions. Thence comes the distinction betwixt the irritability of muscles and the sensibility of nerves; for the irritability of muscles survives the animal, as when it is active after death; survives the life of the part, or the feelings of the whole system, as in universal palsy, where the vital motions continue entire and perfect, and where the muscles, though not obedient to the will, are subject to irregular and violent actions; and it survives the connection with the rest of the system, as where animals very tenacious of life are cut into parts; but sensibility, the property of the nerves and of the sensorium, gives the various modifications of sense, as vision, hearing, and the rest; gives also the general sense of pleasure or pain, and makes the system, according to its various conditions, feel vigorous and healthy, or weary and low. And thus the eye is sensible, and the skin is sensible; but their appointed stimuli produce no motions in these parts; they are sensible, but not irritable. The heart, the intestines, the urinary bladder, and all the muscles of voluntary motion, answer to stimuli with a quick and forcible contraction; and yet they hardly feel the stimuli by which these contractions are produced, or at least they do not convey that feeling to the brain. The muscular parts have all the irritability of the system; while nerves have all the sensibility of the system, and have the power of exciting motion without the power of motion.

The vis insita is a power that is in continual force, preserving the parts ready for their proper stimuli, whatever these may be; one set obeying their own peculiar stimuli, while others are obedient to the influence of the will. The heart is stimulated by the quantity or quality of its blood; the stomach by the presence of food; the intestines by their contents; the urine stimulates the bladder; the venereal appetite stimulates the genital system; the fœtus stimulates the womb; and the voluntary muscles (if we may be allowed to guess at a thing so little known) are excited by the nerves, and so are obedient to the will; for, to our limited view, the nerves seem to be the sole messengers of these commands, and any stimulus to the nerves moves the muscles like the commands of the will. The absence of the due stimulus to each, or the presence of the ordinary stimuli in too great power, will excite irregular motions, as fulness of blood in the heart, poisons in the stomach, acrimonies in the intestinal canal, or the passions of anger or fear in the system of the voluntary

muscles. The due stimuli preserve their right tone and action; but these violent stimuli hurt their irritability or moving power; the heart acts weakly after fevers; the appetite is languid after debauch; the limbs are weakened by labour; and the whole system is ruined by excess. Thus, the functions by which the system lives—the heart, the stomach, the bowels, and the womb; the various sorts of vessels by which the fluids are conveyed—are providently removed from the influence of the will; for these are the machines of the system, whose motions could not stop, must not be interrupted, nor lowered, nor raised, but must move and act according to the needs of the system. Not left to the irregularities or carelessness of voluntary motions, they are governed each by its own peculiar stimulus, and act in a continued and equal course.

Thus, there are in the body two living powers, which are as cause and effect in all the motions of our system. The nerves stand as an intermedium betwixt all external objects and our general sense; by the impressions through these come pleasure and pain, and all the motives to action; by the will, returned through other nerves, all voluntary motions ensue. Thus are the nerves as internuncii betwixt the external impression and the moving power. But nerves were never known to move under the influence of stimuli: the moving power is another property of a distinct part of our body, having its own arrangement of particles, and its own peculiar form. All motion, then, proceeds from the joint operation of either power; the nerves convey the impressions, while the muscles contain the power; and it is here, as in other natural effects, the external cause changes, while the inherent property, the subject of its operation, remains the same. Some have, with reason, supposed that the nervous power is the regulator of the system; it is the property suited to all the supports of life, upon which they act, and by which they maintain their power over our body, but is subject to continual changing; it rises and it falls, is perfect or low; but the energy of the muscle, which is to answer to this power, remains ever the same, while its organisation remains; the nervous power is exhausted and languid; but the muscular power is always perfect, always ready for the excitement of stimuli, or for the commands of the will.

(To be continued.)

DR. COFFIN'S BOTANCAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

DIET AND REGIMEN.

(Continued from p. 275.)

POT-HERBS, ROOTS, ETC.

1 *Asparagus.*	7 * *Broad Beans.*
2 *Cauliflower heart*	8 * *Cabbage or Greens.*
3 *French Beans.*	9 * * *Carrots.*
4 *Mealy Potatoes.*	10 * * *Parsnips.*
5 *Spinach.*	11 * * *Peas.*
6 * *Turnips.*	

The whole of the individuals in the above list are to be looked upon by the dyspeptic as suspicious articles of food; as being *likely* to disagree; and consequently the effects which they produce on the stomach, during digestion, ought to be noticed. In point of fact, food should

never be felt in the stomach at all; and whenever it is felt, to however small a degree, there is evidence that the functions of the stomach are deranged; and that the food has not been adapted to its powers or its condition. Asparagus, eaten with salt only, without butter or sauce, almost always agrees; yet there are cases of dyspepsia in which even this produces disturbance. As the article stands lower in the list it is, of course, more indigestible. The *marked* articles ought, at all times, to be shunned by the dyspeptic; and even the others ought always to be eaten by him *sparingly*, without sauce; and their effects to be carefully watched.

VEGETABLES EATEN UNCOOKED.

1 *Watercress.*	5 *Celery.*
2 *Mustard.*	6 *Radish, scraped.*
3 *Cress.*	7 * *Onion.*
4 *Lettuce.*	8 * * *Cucumber.*

The three first-mentioned articles in the above list, watercress, mustard, and cress, contain each of them, a peculiar essential oil, which is palatable to most, and is a very grateful stimulus to the stomach and the appetite.

Lettuce contains a narcotic principle which is the reason why they should not be eaten unrestrainedly, unless in the evening.

Celery, if quite sound and fine, and only the centre is eaten, almost always agrees even with the confirmed dyspeptic.

The digestibility of radishes is more doubtful; but if they are carefully scraped, to free them from the acrid skin, they may be tried cautiously.

Onions ought to be avoided by most dyspeptics.

Cucumbers ought never to be eaten. This is one of the few points on which "doctors do not disagree."

FRUITS AND SEEDS.

1 *Orange.*	9 *Apple, Pear.*
2 *Strawberry.*	10 * *Cherry.*
3 *Raspberry.*	11 * *Plum.*
4 *Pineapple.*	12 * *Walnut, Chestnut.*
5 *Grape.*	
6 *Currant.*	13 * *Hazelnut, Filbert.*
7 *Gooseberry.*	
8 *Peach, Nectarine, Apricot.*	14 * * *Melon.*

The above is a tolerably long list of the fruits and seeds which are usually procurable in England, and important from being generally used. A few observations are all that I shall indulge in. The juice alone ought to be swallowed; the skin or other matters ought to be rejected. Perfectly ripe fruit, eaten in moderation and at proper times, seldom does harm. The acidity of fruits is that which constitutes their chief objection; and the dyspeptic must, at all times, eat them with much caution. Fruits ought not to be eaten by him after his meals, for then not only are they unnecessary, but they are worse; they interfere with the process of digestion and not unoften wholly interrupt it. The best time for eating fruits is the forenoon, between breakfast and dinner. The stomach is then in that state of repose which fits it for their digestion, by devolving to them its whole attention, an attention undisturbed by other business. If, then, the time at which fruits are eaten is attended to; if the juice only is swallowed, and if they are partaken of sparingly, and if those *marked* as indigestible are avoided, they will seldom do harm. But, after all, a man must attend to his own sensations, and judge of the propriety of eating them by their effects on his stomach.

It is imperatively necessary that I here mention the foreign dried fruits, both because they are very much eaten, and because almost everybody thinks them to be so perfectly harmless, so easily digestible, that the unpleasant effects produced by them are hardly ever attributed to them, but are more usually laid upon some other article of diet, which is perhaps no more, perhaps not so much to blame as they are. I have said that the skins of fruits are very indigestible; in fact, the most of them are not digested at all, but are parted with in exactly the same state as they are swallowed. It is so with dried fruits; and as it is evidently impossible to eat *them* without swallowing the skins, they often irritate the lining membrane of the *prima via*, and particularly the lining membrane of the lower bowels. Dried currants or plums ought not, then, to be put into the invalid's pudding or bread. The dyspeptic ought seldom, if ever, to eat them. It is a common practice to put a few dried

currants into the pudding made for the sick-room; it is a common practice to add a few dried currants into bread made for a man who is debarred from the use of butter. Let me hope that these observations may be a partial means of causing the practice to be discontinued.

For the same reason, if preserves are to be allowed to the sick or the dyspeptic (a practice by the way which is not always judicious) it is well to prefer jelly, or the juice and pulp made into a confection with sugar, to jam, in which the skin and seeds are likewise present. Of the various preserves, I would direct the invalid's attention to "Scotch Orange Marmalade," as being one of the best and most soothing to the dyspeptic stomach. It is made of the bitter Seville orange. It acts as a grateful stimulus to the stomach, while it somewhat sooths its irritability. The great objections to orange marmalade are the sugar and the skins of the oranges. It ought to be made for the dyspeptic with less sugar than is commonly used, and instead of the skins themselves, an infusion from them will answer every purpose of flavour and tonic, without running the risk of irritating the *prima via* with an indigestible substance. But this and all preserves are improper for the seriously afflicted dyspeptic or invalid. Some of them, however, furnish a pleasant substitute for butter, and are in many cases very properly allowed.

VEGETABLE PRINCIPLES.

1. *Starch.* 2. *Gum.* 3. *Sugar.*

Some may, perhaps, be almost amused at my classing starch among the articles of diet, little thinking that arrowroot, and sago, and tapioca, and salep, are little else than starch. Any one of these forms a light and not unpalatable diet for the invalid, a diet which is by most preferred to either gruel or barley-water, to which articles only are they second in point of digestibility.

I have mentioned gum in the above table, and I have done so because it is the principal ingredient in Iceland moss and Irish moss, one of which was, some years back, and the latter of which has more lately been, much praised as a beverage for the invalid, not to mention other more important effects which have been ascribed to them. They are only to be considered as a cheap mode of procuring mucilage, the pure state of which is gum-arabic. They are harmless, and easily digested.

Sugar is with much difficulty digested. It is, perhaps, the most nutritious of all vegetable substances, and perhaps the one which is hardest of digestion. Let the invalid shun it. Let the mother cease to encourage the taste for it in its various shapes, which is common to nearly all children. There is no one solid article of diet which does so much harm, which is the remote, and often unsuspected cause of so much evil. Molasses or treacle, the uncrystallisable portion of sugar, is, in general, more digestible, and is usually somewhat laxative. When it is sufficiently so, it often carries off its own deleterious effects. The same remarks apply to honey, but to a much greater extent: it is much more digestible, much less irritating to the stomach, than either sugar or treacle. It may be mentioned that several articles of food which, in the many, disturb the functions of the stomach, act, in the few, as laxatives, and when such is the case, may, with some exceptions, be eaten with impunity.

1. *Tea.* 2. *Coffee.* 3. *Cocoa.*

In the face of the many strictures with which tea has of late been visited, I have ventured to place it at the head of this list; and I have no hesitation in saying, that much of the odium which tea has incurred, would, with more justice, have been laid on the shoulders of the *sugar* which is taken with it, and the quantity of *warm water*, with which it is the means of deluging the stomach. My opinion of sugar has been already given freely; and it only remains that a few words be said about the warm water. Some several years since, it became somehow the *fashion* for dyspeptics to drive off the fit of indigestion by copious draughts of hot water. The practice soon told a fearful tale. In the course of months, relief was no longer afforded; the disease became worse; and, in no few instances, terminated in disorganisation, or in structural derangement, organic and incurable disease. In nearly all the cases, the fibres of the stomach

were essentially weakened, and it was thrown into an almost powerless condition; from which the unhappy sufferer was only relieved by a protracted perseverance in the exclusive use of the plainest diet, as gruel, arrow-root, and sago. I have dwelt the longer on this matter, because it may be the means of checking the practice in some who are ignorant of the consequences, and who could hardly be expected to know that a practice seemingly so simple, could be attended with risks so great; and because it will assist the reader, who is now for the first time thinking of these matters, in conceiving that the warm water, which tea is the means of introducing into the stomach, may possibly do more harm than the tea itself. Let the dyspeptic drink his tea almost *cold*, without sugar; and, if it agree with him, let him add to it half its own quantity of skimmed milk. Let him confine himself to a single teacupful, for the simple reason, that much liquid taken at the time of eating, makes the mass of ingesta, on which the stomach has to act, *too thin*; a state which prevents the contractile powers of the stomach from acting upon them readily.

(To be continued.)

Heaven be their resource who have no other but the charity of the world, the stock of which, I fear, is no way sufficient for the great many claims which are hourly made upon it.—*Sterne.*

KNOWLEDGE.—Of all our desires, perhaps the desire of knowledge is that of which the gratifications are the most pure and unmixed, as well as the most permanent; and which, being at the same time the most difficult to cloy or satiate, affords the most certain and ample means of durable and solid happiness. The science of the philosopher, by giving him a more extended view of things, makes him sensible of his own insignificance in the scale of being; and whilst it enlarges his understanding, narrows his pretensions and humbles his pride. For whatever may be said of the *pride of science*, it is always meek and humble compared with the pride of ignorance.—*Martin's Christian Lacon.*

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BOTANICAL JOURNAL
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MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 41.

DISEASES OF THE STOMACH.

Long-continued abstinence is one among many other conditions which give rise to inflammation of the stomach. Although this fact has been indistinctly perceived since the time of Hunter, we are indebted to MM. Andral and Gavarret for distinctly establishing it in a series of observations, which they instituted some years ago, on the influence of various conditions on the blood. In one of their experiments three dogs were employed. The first was entirely deprived of food and drink, and lived twenty-one days; the second was deprived of food, but allowed to drink water, and lived twenty-five days; and the third was allowed a small quantity of soup every morning, and lived thirty-three days. The third dog was the only one in which the stomach was not ulcerated; and the unnatural redness of the mucous membrane of the stomach was less general and less vivid than the others. Its case seems to shew that even a small quantity of food, if it contain all the necessary elements of nutrition, may hinder those destructive changes which are caused by total abstinence. Although "evident signs of inflammation" were found by Andral in the stomachs of the animals on which he experimented, it does not appear, according to Dr. Taylor, that inflammatory redness of the stomach is by any means invariably present in deaths from starvation in the human subject; and similar effects are produced by a long persistence in food which, whatever be its quantity, is not sufficiently varied for healthy nutrition.

"Inflammation of the stomach may be excited by the presence of some noxious matter in the blood, as, for instance, arsenic, &c., or other irritant substances introduced from without, or, in other words, taken through the mouth." Here, my readers, is another admission by an allopath of the dangerous consequences arising from the practice of administering poisons, notwithstanding their fondness for prescribing them. Let me ask you whether you can have the least confidence in the diplomatised, registered, allopathic dispenser of poisons? If any one, with even the least grain of common sense, can employ a medical man who uses such means for the cure of disease, as, according to his own admission, are fraught with consequences so dangerous, all we can say is, the party deserves to suffer.

"Functional disorder of the stomach," says Dr. Budd, "may result, not from organic disease of the stomach merely, but from organic disease of other organs; and that not by the constitutional disturbance which this disease sets up, or by any change it may cause in the state of the blood, but by an influence transmitted through the nerves. Irritation of the brain, the lungs, the liver, or the uterus, from certain kinds of organic disease, frequently leads, as is well known, to *sympathetic* vomiting; that is, vomiting caused by nervous influence reflected from the seat of disease upon the muscles which perform this act. . . . . Whence we may safely infer that the reflex nervous influence excites not merely the act of vomiting, but also, in many cases, a secretion of gastric juice."

On the deficient secretion of the gastric juice Dr. Chalmers writes:—"A too scanty secretion of the gastric juice may arise from various causes. There is no defect, moral or physical, so frequently handed down from parent to offspring as the inability to form a sufficiency of this secretion." Next to hereditary predisposition we must place overwork of the mind, prolonged anxiety, ambition, &c., and, finally, gluttony, drunkenness, and, in a less degree, indolent and sedentary habits, and the consumption of more food than the system, with so little tear and wear, requires. From any of these it may happen that the gastric juice is not secreted in sufficient quantity for the purpose of digestion, and, consequently, indigestion will ensue.

The signs of a deficiency of the gastric juice are:—

1. An arrest of the food in the stomach.
2. Distress after eating albuminous substances, such as the white of an egg, &c.
3. Decay of albuminous substances in the alimentary canal, and consequent stinking gases arising from that decay.
4. The appearance of unaltered muscular fibre in the stools.

The food in these cases remains undigested, or only partially digested, in the stomach, for a much longer time than the natural period—sometimes for twelve or even twenty-four hours, and during this slow process there comes on a sense of weight or uneasiness at the pit of the stomach, which gradually disappears as the food becomes dissolved and escapes from the stomach. If portions of food remain undigested many hours, they irritate the lining membrane of the stomach, and cause headache, a slightly furred tongue, and feelings of general disorder.

Not unfrequently the irritation of the stomach checks secretion in the liver so as to render the complexion sallow; and in nervous persons who dine late, it greatly disturbs their sleep.

When from permanent weakness of the stomach the digestion is habitually feeble, the body, after a time, is imperfectly nourished, the blood is poor in globules, the circulation is feeble, the extremities are apt to be cold, the spirits are depressed, and the various powers of the body decline. The remedies for habitual slow digestion consist fully as much in the proper regulation of the diet and general habits as in purely medicinal agents.

The gastric juice may, in part, be replaced by water drink; and hence we often find a draught of this liquid, an hour or two after meals, will remove the discomfort arising from difficult solution of meat meals. It is not merely the dilution of pungent, irritating matters which is effected by these means, but the solution and consequent absorption of the decayed nutrimentary mass.

The comfort arising from drinking a short time after meals has originated the custom of tea and coffee soon after the evening dinner. The liquids taken are, however, not nearly so well suited to the purpose as pure cold water is; and many sufferers from sluggishly secreted gastric juice will find from this latter beverage a relief which tea or coffee can never give.

The water may be made pleasanter by being iced, without injury to digestion, for the freezing temperature does not arrest the functions of the gastric juice, and probably, too, the cold giving a tone to the stomach which its torpid, congested condition requires.

A lemon-water ice is another agreeable substitute for tea or coffee.

(To be continued.)

ANOTHER GREAT VICTORY:

AN ATTEMPT OF THE MEDICAL MEN TO CRUSH A MEDICAL BOTANIST.

To the Editor of the Botanical Journal.

SIR,—A plain statement of facts relating to an inquest held at the Mile End Tavern, on Tuesday, August 16th, 1859, touching the death of William Ward, aged forty-five years.

On Sunday evening, the 14th inst., I received a note requesting me to see the deceased, William Ward. About half-past eight I went, and found him labouring under a great difficulty of breathing, and a sense of "suffocation;" his face very pale, pulse full and quick. I inquired of the inmates of the house how it was they had not sent for assistance before? They replied, "they thought it was an attack of indigestion, or spasm." I saw, if anything was to be done, it must be immediate; and having attended the family for two years, I reluctantly at-

tempted to relieve him by giving him a teaspoonful of the acid tincture of lobelia (which article I never leave home without). Waiting a short time, and finding no beneficial change, his having had a mustard plaster on before I saw him, I ordered the son to return with me for a mixture, which W. Ward took, according to directions. I saw him again about half-past ten o'clock the same night, and finding him no better in his breathing; but he had passed urine the first time since retiring, about one o'clock on Sunday morning, a space of twenty-one hours. This relieved him a little in that respect. I then ordered a mustard plaster, and kept it on about thirty-five minutes, which relieved his breathing, he exclaiming, "I can *breathe better;* but take it off, I cannot bear the pain!" I gave him another teaspoonful of the lobelia, and took off the plaster; the suffocation returned. I left him about half-past eleven o'clock, with orders to be called if he got worse. The lodger called me up about two o'clock. I attended directly and found him dead; and Mr. Allnutt, surgeon, had been called, and came while I was there; of course pronounced the man dead, and left. About seven o'clock on Monday evening, a policeman came to tell me that a *post-mortem* examination would take place that evening, at seven o'clock, and, with the coroner's compliments, that I would attend myself, or send a surgeon to attend for me. I attended immediately myself, and waited until half-past seven, when Mr. Allnutt just stepped into the passage, and saw me sitting in the front room. I asked him when the *post-mortem* examination would take place, as I had been waiting half an hour. He apologised, and said the cause was from having a serious accident at the hospital, but that it would take place directly. He then said, "Oh! Mr. Stroud, I think it would be better for you to employ a medical man of the town to watch this case for you." I said I would much rather not, but would do it myself. He said, "Well, I merely suggest it, and think it would be better." I replied, "No, I have done it before, and should do it again." He said, "Well, I only suggest it;" and left, saying he should be back in about a quarter of an hour. I came home, finished putting up some medicines I had left, and returned to the house, when I found Mr. Allnutt and Mr. Garrington, surgeon and MAGISTRATE, in the bedroom of the deceased, discussing the propriety of postponing the examination until the morning, at ten o'clock. When they had decided, I asked if that was so, and Mr. Garrington said, "Yes; and we think, Mr. Stroud, it would be better for you to have a medical man of the town to watch the case for you." I said, "Mr. Garrington, you are aware I have been in practice in this town now some years, and therefore the prejudice against me is very strong; besides, I know of *no* medical man in this or neighbouring towns that I would trust *my liberties with.* Mr. Garrington: "Well, we have nothing to do with it, we are only acting *under the coroner's warrant,* NOT TO ALLOW YOU IN THE ROOM during the examination." I replied, it was most unjust; as, on a former occasion, when there was three other medical men present, they never objected to it, and it was very unjust not to allow it now; and believing they *were* acting under the coroner's warrant, I gave way, and telegraphed for Mr. Waters, surgeon, from London, who promptly attended, and arrived at the house about twenty minutes past ten, when, as Mr. Garrington threatened he would have, there was a policeman there to prevent me entering the house, *contrary to the coroner's orders.*

In the evening, when the inquest was held, the coroner asked Mr. Allnutt for his evidence, as he had charge of the case, and demanded who was present at the examination of the body of deceased.—"Mr. Allnutt, Mr. Garrington." (Pause.) The coroner then asked if Mr. Stroud was present. I replied, "No, sir, they would not allow me to be present." The coroner *warmly* asked why, and said, "I gave strict orders you were to be present." I said, "Mr. Garrington and Mr. Allnutt both asserted they were acting on *your warrant not to allow* me to be present." The coroner then said, "You ought to have been present; I gave orders for you to be, and you ought to have been, there." I thanked him for his courtesy and kindness, and considered it very unjust for those gentlemen to have

taken upon themselves to act so contrary to his orders; and so that portion of the subject dropped.

Mr. Allnutt then gave in his evidence, that there was about one pint of serous fluid found in the right cavity of the chest, and about twelve ounces of the same kind of fluid found in the left cavity; the heart was larger than natural, the walls of the heart were pale and flabby, and about two ounces of serous fluid found in the pericardium. The right lung was congested throughout, and exuded serous fluid on being cut; the left was the same, only not to so great an extent. The coroner asked, "What do you consider was the cause of death?" Mr. Allnutt stated that he considered the cause of death to be hydrothorax or dropsy of the chest. The coroner asked, "Do you consider this medicine (pointing to the bottle on the table that the deceased had taken medicine from) could have had any influence in accelerating the death of deceased?" Mr. Allnutt—"Not in the least." The coroner to Mr. Garrington —"Do you think that this medicine would have any influence in producing this fluid in the chest?" Mr. Garrington —"Not in the least; and I quite agree with Mr. Allnutt in the particulars he has given."

Sir,—In the *Medical Times and Gazette* of Saturday, August 20, 1859, in answers to correspondents, there appears the following. I insert it here for the information of the coroner and jury in reference to the legality of my practice.

At the top of page 200 occurs the following words, viz.:—"No LICENSE *or degree is necessary to enable any one to practise* PHARMACY." Therefore some observations of the coroner and jury on that matter were superfluous and uncalled for, as my practice is quite *legal*, and no one can prevent me practising in the same manner as I have hitherto done. No one could, I venture to say, have raised a more legitimate business than I have, never having issued any bills, never advertised, or assumed any titles that did not belong to me; for it has been quite a matter of indifference what people called me, so I am left to *cure the sick*, which is all I wish or desire.

By giving this a place in your next Journal, you will oblige,

Yours most respectfully,

JAMES STROUD.

In making a few observations upon the above case, we know that there is a great amount of animus and ill-will entertained by the legally qualified medical men, against Medical Botanists who practise Dr. COFFIN'S glorious system. They are obliged to admit its wonderful efficacy in the cure of disease, even when, with all their skill, they have failed; and to think that a simple man, untechnically educated, one who has not gone through a course of college training, should, through his study of and experience of the qualities of herbs, and their sanatory effect upon the human system, be capable of curing the sick, hurts their self-esteem: they find their mineral remedies unsalutary, and their practice uncertain, yet are too proud to acknowledge their error, or to make use of Nature's grand restoratives, or countenance, even by the use of herbal remedies, any system or man who prescribes them. Messrs. Allnut and Garrington were certainly very much less malevolent than many surgeons who have come under our castigation; nor, to their credit be it said, did they attempt to cook up a case against Mr. Stroud. What they were desirous of doing, or whether anything, remains a matter of uncertainty, and, for the honour of human nature we will give them the benefit of the doubt. Mr. Waters being present we think materially kept anything that might have been got up in abeyance; yet in common honesty we cannot acquit them of all blame in stating to Mr. Stroud that they were acting under the coroner's warrant not to allow him to be present during the *post-mortem* examination. The very words of the coroner convicted them of falsehood, and cannot much redound to their credit among their fellow townsmen.

A CASE OF DECIDED CHOLERA CURED.

MRS. ELIZA BRYANT, of No. 58, Red Lion-street, Holborn, aged fifty-four, was taken ill, and was under medical treatment for diarrhœa, &c., for two or three days previous to the 5th of this present month (August). Early in the morning of the

6th, she was much worse. A medical man was called in who prescribed. Upon the taking of the medicine, she became still worse. Dr. COFFIN was then immediately applied to, who sent Mr. Waters, who was in attendance by eight o'clock, A.M. Upon his arrival he found Mrs. Bryant in excruciating pain, with decided symptoms of cholera in its most virulent form, suffering from violent cramps, constant vomiting, rice-water stools, cold, clammy sweats, low, feeble pulse, great restlessness and prostration, discolouration of the skin, and coldness of the extremities. The remedies in use by Dr. COFFIN were immediately applied, and through the unceasing energy and attention of Mr. Waters, at twelve o'clock the sickness abated, and by a diligent use of Dr. COFFIN's treatment, the cramps ceased at twelve in the night of Saturday, the 6th instant; and on the Wednesday following, Mrs. Bryant was convalescent.

HOW TO NURSE SICK CHILDREN.

(Continued from page 279.)

MY object, in this series of articles, is to point out to nurses what other qualifications are necessary, and to give some help in acquiring them, to explain what a nurse's especial duties are, and to them some things which a nurse ought to know. First, however, I must remind you that the nurse is not the doctor; *that* she never can be; that if she forgets her proper place, and tries to interfere with his duties, or to set herself above his directions, instead of being a blessing, she will be a curse; instead of promoting the sick child's recovery, she will very often hasten its death.

"Oh," says the nurse sometimes, "the doctor is quite a young man, and I have been a nurse these ten or twenty years. I have seen a great deal of children; I am sure I ought to know; and Mr. Jones, or Dr. Smith, who attended where I lived as nursemaid, used to do quite different to this." And thus, having disobeyed the doctor's orders, it constantly happens that the nurse is afraid to tell him the full extent to which she has gone against them, but either professes to have carried them out, or else in trying to justify herself for having deviated from his directions, makes an incorrect report of the patient's condition. When this is done, one of two things is sure to happen: Either the doctor is displeased at what he considers an improper neglect of his directions, is cross, perhaps hasty, in his manner, or even angry with the nurse, and rude to her; and thus personal dislike arises between the nurse and the doctor: she goes against his orders as often and as much as she dares, speaks against him to the child's parents, makes them very anxious, very unhappy, and, being constantly with them, while the doctor is there but a very few minutes at a time, induces them sometimes to join in thwarting his wishes, and all this time the child gets worse and worse, and at length dies; or the doctor believes to the full the exaggerated statements which he hears, alters his practice under the belief that such changes were necessary, when in reality they were not desirable. The nurse gains a triumph; but what becomes of the patient?

Now I would remind all nurses, that even the youngest doctor must have a great deal more knowledge about diseases, and about remedies, than almost any nurse can have, more especially if he has made himself a complete master of Dr. COFFIN's Medico-botanic System of medicine, and well digested the doctor's "Guide to Health." The nurse hears that one child has inflammation of the brain, another has inflammation of the lungs, and so on, but she knows scarcely anything about these parts, except just that people breathe with the lungs, and think with the brain. The doctor has had to learn how these parts are made and shaped; how it is that the lungs serve in breathing, or the brain in thinking, and he has seen what nurses have not—the changes, after death, that disease has produced in these very parts; hence he is a much better judge of what the danger to be feared is in this case or in that, and consequently of what will be likely to be the best means of removing it. Besides there are certain means of making out the progress of some diseases with which the doctor is acquainted, but of which, without any fault of a nurse, she is necessarily ignorant; as, for instance, the listening to the chest, in order to

judge by the sound of the breathing, or the beating of the heart, whether these parts are doing their duty properly, or whether disease in them is growing worse or getting better. The experience, too, of even a young doctor, is, in reality, larger than an old nurse: he has seen a great many cases in the hospital when a student, and studying them, with the advantages of his superior knowledge, must have learned more about each than a nurse possibly can have done, while the mere number of patients seen by him is much greater than can have come under the notice of any nurses, with the exception of the few who have themselves been for years engaged in an hospital.

But, alas! there are bad doctors sometimes, doctors who were idle when young, and are, perhaps, stupid, obstinate, and self-conceited when old, and there can be no question but that a good nurse is worth a great deal more than a bad doctor. How, then, is a nurse to acquit herself of her duties, so as, whether the doctor be good or bad, to render the greatest possible service to her little charge, and promote his or her recovery to the utmost of her power?

First. Let her constantly have before her mind a sense of the high importance of her own duties, of the infinite value of human life, of the strict account she is morally compelled to give of the manner in which she performs what she has undertaken, and then all such foolish, paltry feelings as jealousy or dislike to the doctor, or desire to show off her own knowledge, will not enter into her mind, or, if they do for a moment, they will not remain, will not influence her conduct.

Second. Let her be firmly convinced that, even as far as her employers are concerned, real knowledge of her duties, and zeal in their performance, real skill in understanding the signs of disease, or in perceiving when a plan of treatment is likely to be useful or injurious, cannot remain unnoticed, will seldom be allowed to pass unrewarded.

(To be continued.)

A COURTIER TO THE LAST.—When Louis the Fourteenth visited the deathbed of one of his favourites, the dying courtier begged pardon for the "ugly faces" which the acuteness of his suffering compelled him to make!

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

RED RASPBERRY (RUBUS STRIGOSUS, RUBUS IDÆUS).

THIS plant is perennial as regards its root, and biennal as regards its vegetation. It is extensively cultivated in gardens; though many prefer the wild plant, being of opinion that its medicinal properties are superior to the cultivated.

The wild raspberry grows plentifully in mountainous woods and thickets, especially in the north. It flowers in June.

Stem erect, round, downy, with straight prickles. Leaves pinnate of five or three oval leaflets; white and downy beneath. Stems woody, about four feet high. Leaflets more or less angular, and often slightly lobed, green and rough above, snow-white and thickly cottony beneath. Flowers in drooping bunches, greenish-white. Fruit scarlet, though small.

Its medicinal properties are invaluable. From experience we can speak of its wonderful properties, and with the fullest confidence can affirm, that it stands unequalled for removing scurf or canker from the tongue. It is of a mild nature, and, when sweetened with loaf sugar, can be given to children with the greatest benefit. It is excellent for them when attacked with the bowel-complaint.

ALLOPATHIC TREATMENT AND PRACTICE,

IN CONNEXION WITH THE POISONING CASE OF DR. T. SMETHURST.

ON the simple merits of the above case, in a criminal point of view, we offer no remarks, every paper having given full particulars, and no doubt the majority of our readers are acquainted with all its details. What particularly claims our animadversion is the practice of the legally qualified men, and their admission of their knowledge of the deleterious nature of the drugs they make such frequent use of, and the abominable medical practice they are so wedded to, and to which they are so fondly attached. For instance, take the practice of Dr. Julius, of Richmond, who states that "it is a common practice to administer *prussic acid* to stop sickness; and that, among other drugs,

RASPBERRY.

he administered gray powder, a mixture of mercury and other things. How often has Dr. COFFIN reiterated from the rostrum the baneful qualities and effects of these poisonous compounds! yet, in the face of common sense, common prudence, and common honesty, the medical men *will* use them, practising upon their old and cherished system, that they must give one poison to counteract the effects of another. Mr. Thudicombe states in his evidence that gray powder contains arsenic and antimony, both mineral poisons, and admitted with sorrow that gray powder was a medicine constantly given to children. Can our readers want more enlightenment upon the subject than this to prove the utter inability of allopathic treatment to cure disease? Thanks to the promulgation of Dr. COFFIN'S Medico-botanic System, thousands are aware of the fallacies of the faculty, and thousands are beginning to be enlightened upon the shallowness of allopathic practice: indeed, it is now a common occurrence to meet with parties, who have thought and intellect, who plainly affirm that they have no faith in medical men of the regular practice; and they add, that they have more faith in the curative properties of a few herbs boiled up than in all the doctors' prescriptions put together; observing, from actual experience, the failures of the latter, and the curative effects wrought out by the former.

Health is a blessing too valuable to be trifled with, and disease a misfortune of too great a magnitude to be treated frivolously or wrongly; and he who *radically* cures the quickest, which can only be by the use of medicines which assist Nature, and act in harmony with her laws, is the man in whom all ought to place implicit confidence.

Surprising cures have been and are constantly wrought through Dr. COFFIN'S Medico-botanic System, even when high medical men have failed; and we would most earnestly advise all parties to obtain a copy of his invaluable "Guide to Health," which will enable the possessors of that work to do without calling in the legally qualified, remembering the old proverb, "*a stitch in time saves nine.*" So it is with disease: commence treatment as soon as you perceive it, take it in time, and it will soon yield to the treatment laid down in the "Guide to Health." Of this you may confidently rest assured, and be enabled to set the doctors at defiance.*

DIET AND REGIMEN.

(Concluded from page 288.)

COFFEE is more nutritious than tea, but it is at the same time more difficult of digestion. By the healthy, or even the slightly invalided, it should be preferred, as an ingredient in the breakfast, to tea, on account of its being more nourishing and substantial. Were it not that very few undergo sufficient exercise to render two meals a day of animal food either necessary or proper, or even safe, I should feel disposed to recommend some kind of animal food for breakfast. It is the meal at which more articles, and articles of more difficult digestion, may be eaten with safety, than at any other. Some short time since a medical friend of mine directed my attention to the extraordinarily cordial, reviving, and *warming* effects of coffee, taken either before or after continued exposure to cold, as in travelling; and its effects in this way are certainly very considerable. Without encroaching upon another and distinct department of the subject, we may just allude here to the common practice of "taking a dram" of some kind of spirits before exposure to cold. It is a practice at once foolish and dangerous. The stimulating effect of the spirit soon goes off, and is followed by a degree of languor proportioned to the amount of stimulation. This is the state in which the body is most easily chilled—the secretion of the skin most easily checked; in which the person is most liable "to take cold;" and if he is exposed to the influence of cold after the stimulating effects have subsided, the chances are very strongly in favour of his suffering from it. Spirits ought not to be taken before such exposure, unless the person is to be so exposed but for a very short time, or unless the dose is to be repeated as often as the effects of the previous dose begin to subside. Coffee does not seem to be liable to this objec-

* See the letter of Dr. Caldwell, of Birmingham, in the last number of the Journal, page 282.

tion; its stimulating effects are much more lasting; and its *warming* effects seem to me to be even greater, and the subsequent languor is certainly less.

There are few things, I may here remark, for which we ought, as regards health, to be more grateful to Providence, than for the introduction of tea and coffee. As civilisation advances, the man of wealth and rank uses personal exercise less, whether in walking or on horseback, and he prefers the luxurious carriage as a means of transporting himself from place to place. Keeping pace with the progress of civilisation, is the number of the thinking and the studious increased; a class of men which is proverbially, and with few exceptions, sedentary. Tantamount to the increased number and importance of our commercial relations, is a larger number of men drawn from the fields, and the health-fraught toils of agriculture, into the pent-up and close atmosphere of a town, and have their time occupied in sedentary, or almost sedentary, employment. In this way there has arisen a daily increasing number of all classes, who, taking less exercise, could bear less food; could assimilate, consistently with health, a less amount of nutriment; who could not eat with impunity the meat and beer breakfasts, the heavy, substantial food, to which their fathers had been accustomed; and to meet this, tea and coffee have been introduced, and supply the desideratum;—a diet which is palatable, only moderately nutritious, and, if not abused, quite harmless.

Cacao, commonly pronounced cocoa, is by no means so universally easy of digestion as either tea or coffee; but still there are dyspeptics with whom it invariably agrees. The only thing that can be done under these circumstances, is to appeal to the experience of the invalid himself. It ought to be made weak; and, like coffee, to be taken at breakfast, rather than in the evening. But cacao, whether the bruised seed is used, or whether that made into a cake with vanilla or spices, constituting chocolate cake, is preferred, contains an oil which by no means always suits the stomach of the man in health and vigour; and still more frequently disagrees with the valetudinarian.

CONDIMENTS.

To give a tabular view of these is impossible. The habitual, or, at all events the inordinate, use of any of them is improper.

Salt is the only one of which some may, and ought to be, eaten daily. But even salt is liable to abuse, and even it should be used sparingly; for the simple reason that, taken in excess, it irritates the lining membrane of the stomach, and thus derauges its functions, and the functions of its glands, producing thirst and stomach disturbance; while, on the contrary, taken in moderation, salt gratefully and gently excites these secretions, and improves the digestion, the appetite and the health.

A too sparing use of salt is apt to be followed by acescency, indigestion, scurvy, &c. Certain kinds of food require salt more than others: thus, more salt ought to be eaten with the fat than the lean of meat. It should be known that the young, stout, and plethoric ought to eat less salt with their food than the elderly, spare and debilitated.

Vinegar ranks next in point of importance, and, perhaps, of harmlessness. There are states of even disordered stomachs, which are benefited by small quantities of vinegar. In general, however, this, and all the vegetable acids, including lemon and lime juice, do not suit the dyspeptic, and should not be used without considerable doubt, hesitation, and caution, by the invalid. Vinegar seems, however, rather to facilitate than otherwise, the digestion of food in the moderately healthy stomach; and, under such circumstances, it may be taken occasionally, without either risk or inconvenience. I say occasionally, because the fact that vinegar facilitates digestion, is no reason for its habitual use; at least is not a much stronger reason than that which is applicable to all stimuli.

Mustard and the peppers deserve to be mentioned next. I have said *the* peppers, to include long pepper, the common black or white pepper, and cayenne. These differ very little in their effects, unless as to the degree of stimulation. They, and all stimulants, excite for a time, rousing the organs into greater activity, increasing the amount of the

secretions, and augmenting the powers of the system, especially of the stomach; but languor and exhaustion are almost sure to follow even a single instance of their immoderate use; and, taken habitually, they are certain to produce, indirectly, debility, and weakened action of the several functions, particularly and usually, in the first place, of those of the stomach. Their use should, therefore, be only moderate and occasional.

The various spices are to be looked upon in the same way, as first exciting the action of the stomach and increasing its powers, ultimately and indirectly weakening it, and impairing very materially and seriously its functions.

In the list of spices, caraway or carui seeds are deserving of especial notice, for their grateful effect on many dyspeptic stomachs, especially such as are suffering for a want of power. They seldom do harm, are often productive of much relief and are little liable to abuse. They form a palatable and wholesome addition to the invalid's bread or biscuit, and materially facilitate its digestion.

As a general rule, it may be said that condiments (salt alone excepted) ought not to be eaten by the dyspeptic at all; and they ought to be used only occasionally and moderately even by the healthy.

Pickles are liable to the objections which are combined under the several heads, of vegetables, vinegar and spices. They ought never to be eaten by a man whose powers of digestion are either weak or disordered. Such an one ought to look upon and avoid them, as he would look upon and avoid poison.

DR. COFFIN'S BOTANCAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

VARIETIES.

Sugar in the Olden Time.—In the reign of Henry the Fourth of France, sugar was so rare in that country, that it was sold by the ounce by apothecaries, nearly as Peruvian bark is now sold. —*Echo du Monde Savant.*

Solitude.—There is, perhaps, no misfortune of life more truly bitter than being shut up, without any society to divert our chagrin, with one who daily excites our disgust by a total want of sympathy in every feeling of the heart.

The most splendid royal christening upon record is that of Henry the Sixth's only son, Edward. It took place in Westminster Abbey, and the mantle in which the babe was received after its immersion cost a sum equal to £6,000 of modern money, being embroidered with pearls and precious stones.

Our Penal Code has been framed as if the sole object were to punish the offender, not indeed with any vindictive view, but for the purpose of deterring men from the commission of crime. The reformation of the criminal was altogether lost sight of; or, rather, it never occurred to those who framed our statutes that this was a matter of which the criminal law could take any cognizance. The system of terror was adopted as the sole means of preventing crime; and what has been the result? It has failed; that is to say, not a tithe has been obtained of the good effects that would have followed from the reformatory system, as the recent experiments of our new prison discipline have demonstrated. But, in fact, the experience of centuries has long demonstrated this, that on the criminals themselves the terror system never produced any good result. The man who had once been punished returned to his old ways, undeterred by the suffering he had undergone, contaminated by example, and incensed against the society by whose laws he had been treated as an irreclaimable outcast. We sadly want a better system, which shall unite punishment with amendment.

A TABLE OF THE ENGLISH AND SYSTEMATIC NAMES OF MEDICINAL PLANTS.

Acacia, Medicinal	Acacia Catechu.
Aconite, or Monkshood	Aconitum Napellus.
Agaric of the Oak	Boletus Ignarius.
Agrimony, Common	Agrimonia Eupatoria.
Alkanet, Common	Anchusa Tinctoria.
Allspice Tree	Myrtus Pimenta.
Almond Tree	Amygdalus Communis.
Aloe, Hepatic	Aloe Vulgaris.
Aloe, Socotorine	Aloe Spicata.
Ammoniacum Plant	Heracleum Gummiferum.
Angelica, Garden	Angelica Archangelica.
Anise, Common	Pimpinella Anisum.
Arnica, Mountain	Arnica Montana.
Arrow-root	Maranta Arundinacea.
Asarabacca	Asarum Europœum.
Assafœtida Plant	Ferula Assafœtida.
Avens, Common	Geum Urbanum.
Balm, Common	Melissa Officinalis.
Balm of Gilead	Amyris Gileadensis.
Balsam, Sweet-smelling	Myroxylon Peruiferum.
Barley, Common	Hordeum Distichon.
Bear's Wortleberry	Arbutus Uva Ursi.
Benzoin Tree	Styrax Benzoin.
Bergamot Lemon	Citrus Limetta Bergamot.
Bistort, Great	Polygonum Bistorta.
Bitter-sweet	Solanum Dulcamara.
Bladder Fucus	Fucus Vesiculosus.
Blessed Thistle	Centaurea Benedicta.
Brooklime, Broad-leaved	Veronica Beccabunga.
Broom, Common	Spartium Scoparium.
Buchu Plant	Diosma Crenata.
Buckbean, Common	Menyanthes Trifoliata.
Buckthorn, Purging	Rhamnus Catharticus.
Burdock, Common	Arctium Lappa.
Dandelion, Common	Leontodon Taraxacum.
Deadly Nightshade	Atropa Belladonna.
Dill, Common	Anethum Graveolens.
Egyptian Thorn	Acacia Vera.
Elder, Common	Sambucus Nigra.
Elecampane	Inula Helenium.
Elemi Tree	Amyris Elemifera.
Elm, Common	Ulmus Campestris.
Ergot, or Spurred Rye	Acinula Clavus.
Fennel, Sweet	Anethum Fœniculum.
Fern, Male	Aspidium Filix Mas.
Fig Tree	Ficus Carica.
Fig-wort, Knotted	Scrophularia Nodosa.
Fir, Canada	Pinus Balsamea.
Fir, Norway Spruce	Pinus Abies.
Fir, Scotch	Pinus Sylvestris.
Flax, Common	Linum Usitatissimum.
Flax, Purging	Linum Catharticum.
Flowering Ash	Fraxinus Ornus.
Foxglove, Purple	Digitalis Purpurea.
Galbanum	Bubon Galbanum.
Gamboge Tree	Stalagmitis Cambogioides.
Garlic, Common	Allium Sativum.
Gentian, Yellow	Gentiana Lutea.
Ginger, Officinal	Zingiber Officinale.
Golden-rod, Common	Solidago Virga Aurea.
Grape-vine, Common	Vitis Vinifera.
Guaiacum, Officinal	Guaiacum Officinale.
Hedge-hyssop	Gratiola Officinalis.
Hellebore, Black	Helleborus Niger.
Hellebore, Stinking	Helleborus Fœtidus.
Hellebore, White	Veratrum Album.
Hemlock, Spotted	Conium Maculatum.
Henbane, Black	Hyoscyamus Niger.

Cabbage Tree	Geoffræa Inermis.
Cajeput Oil Tree	Melaleuca Leucodendron.
Calumba Tree	Cocculus Palmatus.
Camphor Tree	Laurus Camphora.
Canella, White	Canella Alba.
Caraway, Common	Carum Carui.
Carrot, Garden	Daucus Carota.
Carrot, Wild	Daucus Sylvestris.
Cardamom Plant	Matonia Cardamomum.
Cascarilla Tree	Croton Cascarilla.
Cassia, Purging	Cassia Fistula.
Cassia Tree	Laurus Cassia.
Castor Oil Plant	Ricinus Communis.
Cayenne Pepper	Capsicum Annuum.
Centaury, Common	Chironia Centaurium.
Chamomile, Common	Anthemis Nobilis.
Cinchona, Yellow-barked	Cinchona Cordifolia.
Cinchona, Red-barked	Cinchona Oblongifolia.
Cinchona, Pale-barked	Cinchona Lancifolia.
Cinnamon Tree	Laurus Cinnamomum.
Clove Pink	Dianthus Caryophyllus.
Clove Tree	Eugenia Caryophyllata.
Colt's-foot, Common	Tussilago Farfara.
Contrayerva Plant	Dorstenia Contrayerva.
Copaiba Balsam Tree	Copaifera Officinalis.
Coriander, Common	Coriandrum Sativum.
Cowhage	Dolichos Pruriens.
Croton, Purging	Croton Tiglium.
Crowfoot, Meadow	Ranunculus Acris.
Cuckoo-flower	Cardamine Pratensis.
Cubeb Plant	Piper Cubeba.
Cucumber, Bitter	Cucumis Colocynthis.
Cucumber, Squirting	Momordica Elaterium.
Cumin, Common	Cuminum Cyminum.
Cusparia, or Angustura	Cusparia Febrifuga.
Hop, Common	Humulus Lupulus.
Horehound, Common	Marrubium Vulgare.
Horse-chestnut, Common	Æsculus Hippocastanum.
Horse-radish, Common	Cochlearia Armoracia.
Hyssop, Common	Hyssopus Officinalis.
Iceland Moss	Lichen Islandicus.
Indian Tobacco	Lobelia Inflata.
Ipecacuanha	Cephaelis Ipecacuanha.
Iris Florentine	Iris Florentina.
Jalap Plant	Convolvulus Jalapa.
Juniper, Common	Juniperus Communis.
Juniper, Lycian	Juniperus Lycia.
Kino Tree	Pterocarpus Erinaceus.
Larch, Common	Pinus Larix.
Laurel, Sweet Bay	Laurus Nobilis.
Laurel, Common	Prunus Lauro-cerasus.
Lavender, Common	Lavandula Spica.
Leek, Common	Allium Porrum.
Lemon Tree	Citrus Medica.
Lettuce, Garden	Lactuca Sativa.
Lettuce, Strong-scented	Lactuca Virosa.
Liquorice, Common	Glycyrrhiza Glabra.
Litmus Lichen	Lichen Rocella.
Logwood Tree	Hæmatoxylon Campechianum.
Loosestrife	Lythrum Salicaria.
Mackaw Tree	Cocos Butyracea.
Madder, Dyer's	Rubia Tinctorum.
Mallow, Common	Malva Sylvestris.
Marjoram, Common	Origanum Vulgare.
Marjoram, Sweet	Origanum Marjorana.
Marsh-mallow, Common	Althæa Officinalis.
Marum, Common	Teucrium Marum.
Mastiche Tree	Pistacia Lentiscus.
Meadow-saffron, Common	Colchicum Autumnale.

(To be continued.)

THE TROUBLES OF LIFE.

Some persons actually conjure up and borrow troubles which have no existence, and others magnify their trials, and turn molehills into mountains. There is also another class of trouble-seekers no less culpable, which is made up of those who prolong their griefs, and spread them over an immoderate period of time, by dwelling on past sorrows after they have ceased to exist, or at any rate to affect the current of their lives. These persons hug their griefs, and will not let them go. They cling obstinately to each object, each memory, which can serve to keep alive a grief which would gradually languish and expire, if it were not sedulously fed and nourished. We are far from advocating a levity and hardness of temper, which are displayed in a hasty dismissal of real sorrows, or in a determined banishment of reflection or sweet if sad memories from the mind; yet we earnestly deprecate any attempt to keep them in full strength and vividness when they should be fading into the subdued and mellow light which time sheds over them. Let everything take the wise and natural course which the Creator has ordered, and without violent and forced efforts to dismiss and conquer a legitimate and real sorrow, allow time and the many soothing and diverting influences, which social life and Nature afford to the sufferer, to have their proper effect in restoring a cheerful and healthy tone to the mind. "Let the dead past bury its dead," and not affect the living present with its enervating atmosphere. We are meant to act; to enjoy, as well as to suffer; and everything which weakens the energies, or induces indifference to the sources of happiness placed within our reach, is in direct opposition to the laws which should govern the feelings and conduct of a rational and responsible being.—*Family Herald, No.* 853.

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BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

No. 296.—Vol. IX. SATURDAY, SEPTEMBER 17, 1859. Price 1d.

THE GLEANER, No. 42.

ON THE DISEASES OF THE ABDOMEN.

Fœcal Tumours have frequently been mistaken for enlargement of abdominal organs, of the liver, kidney, ovary, uterus, &c. In a case where a tumour was taken for a tumour of the liver, it manifested its true nature by being dispersed, with all its accompanying symptoms, on diarrhœa being induced by a dose of dandelion juice. In another case gall-stones were suspected, there being a great enlargement of the liver, with tenderness, bilious vomiting, and fever, while close above the navel, where, considering the size of the liver, the gall-bladder might have been expected to lie, there were perceived apparently immediately beneath the abdominal wall, four or five small, hard tumours, which, however, disappeared on free evacuation of the bowels. In cases of fæcal retention of this kind, we must not always expect to meet with complete constipation; and it is known that even diarrhœa may be present, with great and serious fæcal accumulations; jaundice may also arise in consequence of the fæcal masses exercising more or less pressure upon the choledic duct.

Peritoneal Abscess.—Dr. Henoch relates a case in which the first idea was, that an excessively tender tumour, situated in the right lateral region of the abdomen, and accompanied by vomiting, was an enlarged kidney; but the absence of all the symptoms of renal disease discountenanced this view; and the patient recovered completely, with total disappearance of the tumour, in the course of a few weeks. He also refers to two cases, in one of which, a collection of pus, enclosed by thick, false membrane, formed during life a tumour, below the margin of the ribs on the left side, extending behind them, and simulating an enlarged spleen; while in the other a similar accumulation in front of the stomach, produced a projection in the epigastrium, such as is accustomed to result from a tumour of a subjacent organ.

Pelvic Abscess, which has been at various times mistaken for disease of the liver, kidneys, ovaries, &c., or for fæcal tumours, chiefly occurs in females after delivery. But putting parturition out of the question, Grisolle has shown that the disease is by far more frequent in the male than in the female sex. Out of seventy-three cases which he collected, seventeen occurred after delivery, and of the remaining fifty-six, only ten were observed in females. The causes of the disease are, in addition to a recent confinement, mechanical injury, such as may arise from sudden muscular effort in straightening the body, as a result of which, some fibres may be ruptured and a portion of cellular tissue torn; the presence of suppurating bubo; disease of the prostrate gland, or of the urethra; and inflammation of the spermatic cord. In these cases the suppuration mostly occurs in the cellular tissue, between the peritoneum and the fascia, more rarely beneath the fascia, or in the cavity of the peritoneum.

In distinguishing pelvic abscess from cystic disease of the ovary, a diagnosis which the position of the tumour often renders necessary, the keeping the early

history of the affection clearly in view is of the greatest importance. Encysted disease of the ovary nearly always commences without any striking diseased phenomena, while pelvic abscess is ushered in by marked symptoms of acute inflammation; among these may be enumerated fever, cold, shivering, vomiting, sweats, local pain and tenderness. Extension of the thigh and sudden movements of the trunk are apt to increase the pain; the leg also may become shortened, and consequent lameness be induced by contraction of certain muscles, especially in those instances in which the abscess situated behind the fascia iliaca, compresses and irritates the muscles. In the diagnosis of pelvic abscess, little reliance can be placed upon a sign commonly depended upon, viz.: the detection of fluctuation. Dr. Henoch states, that in the cases which have come under his observation he has always failed to perceive it; and refers to two cases of pelvic abscess where not the slightest fluctuation was present. Among the errors into which the form of a tumour may lead the practitioner, he specially mentions that of mistaking it for an acute inflammation of the right lobe of the liver. He also relates a case in which a tumour of the left ischium might have been confounded with pelvic abscess.

Tumours of the Peritoneum, and especially of the large or small omentum, or of the mesentery, may readily simulate disease of the abdominal viscera, as of the liver and uterus, instances of which are referred to in the writings of Andral and Bright. One of the results of chronic peritonitis, familiar to us from the description given of it by Dr. Hodgkin, is the shrinking up of the large omentum, so as to form a mass beneath the great curvature of the stomach: when this mass is further thickened by the deposition of the products of inflammation, tubercle, or cancer, it may give rise during life to a palpable tumour.

CURE OF INFLAMMATION OF THE LUNGS.

To the Editor of the Botanical Journal.

DEAR SIR,—You will perceive I have enclosed a letter that I have received from a young man I have treated very successfully for a severe attack of inflammation of the lungs.

When I saw him, he was on his back, and the bed almost erect, as it was in this position only he could breathe; respiration was extremely laborious and hurried; pulse quick and small; cough troublesome; expectoration copious, purulent in its character, and mixed with large quantities of blood. This gentleman has been troubled with spitting of blood for three years, and was told, some time back, by his family doctor, that medicine could not benefit him, and therefore ordered generous diet and fresh air. Thinking that the latter could be more effectually obtained at the sea-side, Mr. Elliotte had recourse to Scarborough, caught cold, and brought on an acute attack; a doctor attended him for seven days, under whose care he rapidly got worse, and when all hope of recovery (both by the patient and his friends) were abandoned, I was invited to go and see him; but on finding him in such an emaciated condition, I at once refused to undertake the case. After a long consultation I agreed to undertake it, and do my best, if they would promise (for my safety) to continue their medical attendant. They readily complied with my request, and I prepared the medicines; their effect soon became manifest, and the result was, to the astonishment of all, a speedy recovery.

If you have space for the letter in your next Journal, I should take it as a favour if you will insert it for me, and do good to the cause in which we are all so earnestly labouring.

I am,
Yours respectfully,
GEORGE HALL.

28, *Castle-road*,
August 31*st*, 1859.

TO MR. G. HALL,
Medical Botanist, 28, *Castle-road*, *Scarborough*.

DEAR SIR,—I have exceedingly great pleasure in returning my most sincere and heartfelt thanks for your kindness and attention towards me during my severe and dangerous illnsss, much more so for restoring me from the dangerous state in which I was placed. Had it not been for your strict observance and thorough knowledge of my disease, I

feel convinced that mine amongst the many would have become fatal; but as near as I was to death, allow me the pleasure of stating, so near am I restored to health. The excellent syrup you prescribed has completely cured that great amount of spitting of blood which I was so subject to, and my lungs appear to be quite strong, and are free from pain. I wish you to make this statement publicly known, so that it may direct others that may be situated in the same or any other way, to procure your very valuable and attentive services.

I beg, Sir, to remain,
Your most indebted servant,
JOHN GEORGE ELLIOTTE.

August 24th, 1859.

SCARLET FEVER.

"We have always found lobelia an excellent specific."—Dr. COFFIN.

To the Editor of the Botanical Journal.

SIR,—I have to record the cure of a case of scarlet fever, by Dr. COFFIN's botanical remedies, in a patient fifty-two years of age.

I was called to see him at noon, on Tuesday, the 16th instant, and found him labouring under the following symptoms, viz.: severe pain in the head, a constant gnawing pain in the region of the kidneys, sore throat, tongue coated with fur, and of a bright-red colour at the end, the pulse varying from 95 to 100°, great heat on the surface of the body, and so weak, that he could scarcely lift a cup of tea to his mouth. He had taken some nitre in a basin of gruel, and a dose of castor-oil: a red rash was beginning to appear on the skin, and his appetite was quite gone.

I made a decoction of vervain, centaury, clivers and raspberry-leaves, and ordered him to take one tablespoonful every hour, with a four-grain cayenne pill with each dose of the medicine; and had a bottle of hot water, wrapped in a cloth wrung out of vinegar, placed to his feet. On the evening of the second day, I deemed it advisable to give a lobelia emetic, but the patient objecting, I ordered ten drops of the acid tincture of lobelia to be taken with each dose of the decoction. This course brought about a crisis on the third night; the surface of the body became covered from head to foot with a bright scarlet eruption, and the heat on the surface was so intense, that the patient expressed himself as being on fire. I saw him again on the afternoon of the fourth day, when I at once administered a vapour-bath and an emetic. The lobelia operated very kindly and freely, producing the most happy effect. The fever left him; and why? Because its task was accomplished. Assisted by the powerful but wholesome stimulants, the fever (by which term we mean increased vital heat) had removed the obstruction and restored the balance of the circulation; the rash gradually disappeared; the appetite increased; the tongue resumed its natural appearance; the surface of the body became cool and the pulse regular; he was free from pain and enjoyed a good night's sleep. During the fifth day he remained in the same favourable condition, and on the sixth day I commenced to give the stomach-bitters powder; the next day he was up all day, and on the eighth day he went out for the first time. He continued to take the stomach bitters, and on the fourteenth day from the commencement of his illness, he returned to his employment, that of a bricklayer. The patient's name and address is, Mr. Graham, bricklayer, Westgate Hill, Newcastle-on-Tyne. This case contrasts favourably with that of Mr. Graham's son, who was treated for fever, some weeks ago, by one of the most celebrated medical men of this town, who has an immense practice. The patient was six weeks off work, and is still in a weakly condition. Whether this was owing to the virulence of the disease, or to some other preventible cause, such as the administration of debilitating minerals, I am unable to say, but I have a shrewd suspicion that the fever was not very kindly dealt with, or it would have done its work in much less time.—I am, Sir,

Yours obediently,
RAILTON BROWN.

7, West Hind-street, Newcastle-on-Tyne, August 30, 1859.

To the meditative mind there is a fund of painful reflection in witnessing the triumph of time over the impotent designs of men, who, firm in their own possessions, believe they bequeathed them with equal certainty to their descendants.—*Eugene Sue.*

MUSCULAR POWER.

(Concluded from page 285.)

The irritability, or inherent power, not only keeps the muscles ready, each for its peculiar stimulus, but preserves a balance over the whole system of the muscles. We know that muscles maintain a constant action. The muscles of one side balance the opposite muscles; and if the muscles of one side be relaxed by palsy, the action of the opposite muscles instantly appears; or if a limb be luxated, and its muscles displaced, they persevere in a violent and spasmodic action till they be restored each to its place. Have we not reason to believe, that if muscles were absolutely and entirely quiescent, they could not be so instantaneously called into action, but that by this continual tension or tone, they more readily follow the commands of the will?

The nervous influence, again, is as a mere stimulus to the voluntary muscles. It loses its influence over the system faster than the ordinary powers of life do; and the irritable state of the muscles continues long after the voluntary motion, or the power of excitement from the nerves, is gone; for, when a man dies slowly, this inherent power is exhausted in the struggles for life. If, while in perfect health, he is killed by a sudden blow, the irritable power of the muscles survives the nervous system many hours or days, and we can, by operating upon this poor remains of life, restore the circulation, reanimate the nervous system, and recover that life which seemed to have entirely left the body; and thus the nervous influence, which seemed to animate the system, and to be the prime mover and source of life, owes its restoration to that which was thought to be but a secondary power. We naturally revert in this place to the sound opinions of Mr. Hunter, who, speaking of life, distinguishes the properties or actions of parts into two: those which regard their own preservation, and those which regard the general economy. These latter may be interrupted, as by suffocation; but if the powers of the separate parts remain, we may produce resuscitation and reanimation by restoring the corresponding sympathies. It is the remains of contractile power which fixes the dead body in whatever posture it is placed; it is this remains of irritability which preserves freshness in the animal which seemed dead, but which is really dying still; for the moment this lingering portion of life is gone, the body dissolves and falls down; and so we judge of freshness by the rigidity of the flesh, and foresee approaching putrefaction by its becoming soft. The fish which is allowed to struggle till it be dead; the ox overdriven before it be brought to the slaughter; the animal killed by lightning, which suddenly explodes (if we may be allowed the expression) all the powers of life; in these the contractile power is effectually destroyed or lost by the entire death. The life stopped all chemical decomposition, but now putrefaction comes quickly on. In those who die of the plague, of poison, of fevers, or of any sudden and violent disease which at once extinguishes life in the vulgar sense, and robs the system of that remnant of life which the physiologist could produce to view—in all these cases the body becomes putrid in a few hours.

And here we are led to observe a fact of great consequence to the pathologist; the muscles are not equally under the influence of the sensorium; some are prompt and exact, under the guidance of the will, whilst over others we have no command at all; and there are not a few which we command indirectly, that is, we put a certain class of muscles into operation, which are followed by the combination of others, over which we have no direct power. And as the muscular system is thus connected with the sensorium in different degrees, so we might be led to expect that these muscles might be differently influenced when the mind is oppressed. In fact, in proportion as the muscles are more or less immediately under the guidance of the will, so they are affected when the brain is oppressed. This we may see in the approach of natural sleep, or in the effects of intoxication. The influence steals over the eyes, the countenance, and the limbs, until the vital operations of respiration and circulation are all that remain apparent.

But, before dismissing this subject, we must present the muscular system in a different view from what has hitherto

been taken of it. The voluntary nerves, which control the muscular system, are sensible of the degree of activity assumed by these muscles, and there is thus an universal sense spread over the body, which ministers to the proper organs of sense, and is, itself, more important than them all. It is by this property in the voluntary nerves and muscles that we are enabled to balance the body in standing, walking, or running; adjusting the muscular action, and the state of tension of the limb, to the gravitation of the body, and so sustaining it in every variety of posture. We see with what pain, and after repeated efforts, the child acquires this power; and we see how a man is deprived of it in sickness or inebrity: whilst the utmost perfection of the same power is exhibited in the rope-dancer. And what we are thus led to contemplate in the whole body, may be noticed in the hand, in subserviency to the sense of touch; in the tongue, as subservient to mastication; in the eye, in aid of vision. It is this faculty which gives us the impression of resistance, and consequently of weight, of solidity, of fluidity, roughness, smoothness, angularity, &c. Thus, a man deprived of his sense of touch in his arm and hand, has continued in possession of the muscular power, and of the sense of muscular exertion, and, therefore, he could form an estimate of the weight of what he held in his hand. Here then is truly that power which gives us the most accurate perception of things external to the body, and of all those qualities which would induce us to call this the geometrical sense—a term which has hitherto been given with little propriety to the sense of touch.

As for the mechanical powers by which the contractions of the muscular fibre is forwarded or retarded, they are not what they have been believed; for we find few circumstances in the origin, insertion, or forms of muscles, to favour their power, but many by which their power is abridged. There are certain points where the length of lever gives an increase of power. The mastoid process and the occiput are as levers for the head; the spines of the vertebræ for the back; the olecranon for the arm, and the pisiform bone for the hand. The pelvis, and the jutting trochanters are as the levers for the thigh; the patella is a lever for the leg; the heel-bone is a lever for the whole foot, and the arch of the foot is as a lever for the toes. These are not the whole, but they are, perhaps, the chief levers in the human body. In all the other implantations the muscle is fixed, not behind the joint, but betwixt the joint and the weight that is to be moved. There is a greater loss of power when inserted near to the joint: there is less loss of power when the tendon is inserted far from the joint, and though we call such insertion a longer or shorter lever, there is always some loss of power, and the true levers in the body are very few: far from providing mechanical forms to increase the power, nature has provided such a quantity of contractile power as to compensate for any loss of effect; so, in place of increasing the effect of muscles by levers, pulleys, and hinges, there is in almost every muscle a great abatement of its force, by the form of the bones which it is destined to move; for muscles lose of their effect by their being implanted, not behind the joint, but betwixt the joint and the body to be moved; by the insertion of almost all muscles being very oblique with respect to the motions which they are to perform, so that half their force is lost upon the immovable end of the bone. Much force is lost by a muscle passing over many joints: one set of fibres in a muscle hinders the action of adjoining fibres, and every degree of contraction takes from that muscle an equal proportion of its power. Thus, everywhere in the human body, is power sacrificed to the form and fitness of the parts, that the joints may be smaller than the limbs; that the limbs may be proportioned to the body: and beauty, conveniency, and velocity of movement are gained by the sacrifice of that power which is not needed in the system, since the wisdom and goodness of the Creator have appointed a degree of force in the muscles more than proportioned to all this loss of the mechanical power. Those who will admire the ways of Providence, should know how to admire! Nature is not seeking to compensate for want of power, by the advantages of pulleys, and levers, and mechanical helps; nor is it in the forms

of the parts, that the Infinite Wisdom is to be found: for among other gifts, such a portion of this spirit is given to man, that he has used the pulleys, and levers, accelerations of motion, and all the mechanical powers that result from it; he has invented valves of infinite variety, each perfect and true to its particular office; he has anticipated all that he has found in the mechanism of the human body; but the living power which compensates for the want of levers, which allows everywhere power to be sacrificed to the beauty of form, which has strength in convulsive and violent actions to break the very bones; this is the act of Infinite Wisdom, on which our admiration should chiefly dwell. It is but the very elements of so deep a subject that we have touched upon.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

ANATOMY.

(Continued from page 272.)

BONES OF THE UPPER EXTREMITIES.

These hang from the upper parts of the sides of the chest, and are composed of the bones of the shoulder, arms, fore-arm and hand. The shoulder is made up of two bones, namely, the collar-bone and shoulder-blade: these are joined together immediately over the top of the humerus, and thus form what is properly termed the shoulder. The clavicle (or collar-bone) is a long, roundish bone, shaped like the letter S, and situated obliquely in the upper and lateral part of the chest. The scapula (or blade-bone) is triangular, and placed in the upper and lateral part of the back. Its fore and inner surface is irregularly concave. Its hind and outward surface is convex, and divided into two unequal parts by a ridge called the spine of the scapula; the fore part of this process is named the acromion, to which the clavicle is fixed. Near this ridge is another, called coracoid, and close to this is a semicircular niche or groove for the passage of blood-vessels. The shoulder-joint is formed by the large round head of the humerus, and the shallow, articular cavity of the scapula. The arm consists of one long bone, the humerus just mentioned, which occupies the space between the junction of the clavicle with the scapula and the fore arm. It is a long, cylindrical bone, thickish at its ends, and distinguished into body and extremities. The humerus is connected to three bones—with the scapula, the radius, and the ulna.

The fore-arm is made up of two bones, the ulna and the radius. The first forms the inner and hind and the second the outer and fore part. The ulna at its upper extremity has one large process named olecranon, and a small process on the fore part; and on one side between these is also a cavity which receives the upper end of the radius. At the lower end of the ulna is a process called styliform, and a round head which is received into the radius.

The radius is received at its upper end into the ulna. A little below its head a large tubercle is found. There is likewise a thin edge into which the transverse

ligament is fixed, which arises from the ulna. The radius is connected to the humerus, the ulna, and the carpus. The carpus, metacarpus and fingers compose the bones of the hand, as the tarsus, metatarsus and toes do those of the feet. Each hand has these twenty-six bones. The carpus (or wrist) is situated between the fore arm and metacarpus. It is composed of eight bones, which lie close to one another in a double row, one of which is higher, the other lower. In the higher row are the navicular, lunar, cuneiform, and orbicular. In the lower row are the trapezium, trapezoides, magnum and cuneiform bones. All these bones are convex towards the back, and slightly concave towards the palm of the hand. They bear some resemblance to the names given to them, but are not easily known when seen separately.

The metacarpus consists of four bones which sustain the fingers, and one shorter bone for the thumb.

The fingers are situated at the lower extremity of the metacarpus, and consist of the thumb and four fingers properly so called. These last consist of three separate parts called phalanges. The thumb is only divided into two phalanges. Each phalanx of the fingers is broadest at its upper extremity, and formed into a superficial cavity; the body or middle part is convex outwardly, and concave inwardly; the lower extremity is rounded.

ALLEGED DEATH FROM INCOMPETENT MEDICAL TREATMENT.

Public rumour at Hartlepool, during the last three weeks, has been busy with the painful history of a case of alleged improper treatment by unqualified medical practitioners. Up till the period of our last week's issue, our information on the subject was not such as to warrant the publication of any of the numerous versions of the circumstances, though with some of these we were fully acquainted. What was, however, known to be correct, at that date, was, that somewhere about the end of the previous month, a poor woman, wife of a Scotch labourer resident in the borough, had been removed by an order from one of the resident county magistrates, to the Durham County Lunatic Asylum at Sedgefield, a hopeless lunatic, after having been, some fortnight before, delivered of a child under circumstances which were held by medical men who subsequently attended upon her to convey reflections of the gravest character on one or more of the persons who had attended at the birth; that the child had subsequently died; and that the unfortunate mother was not expected to be restored. Advertisements had, meantime, appeared in many of the north country newspapers (amongst others in *The Mercury*), citing or insinuating other causes likely to have proved injurious, penned by one of the parties whose characters were supposed to be affected by the inquiry likely to ensue on the termination of the mother's life; but these, inasmuch as they presented no coherent representation of the facts, only served the more to stimulate public curiosity and anxiety as to the prosecution of an inquiry. The question at issue gradually resolved itself into this: "Has this woman's life been sacrificed by the ignorance of her natural guardian, and the incompetency of those on whom he relied for assisting her in the hour of her sickness and greatest need by skill and knowledge in her treatment?" and in this form it was being debated, by all who had received any information whatever as to her unfortunate plight, when, on Friday last, intelligence was received at Hartlepool that her sufferings were at an end. Mr. Settle, the coroner for the district, being at present (as many will regret to learn) in ill health, the "information" given in such cases by the county officers was conveyed to Dr. Atkinson, of West Hartlepool, his deputy; and here a very narrow escape was made from a signal miscarriage of justice, arising from the deficiency of the machinery recently improvised by Quarter Sessions for the purpose of providing a check upon real or supposed abuses of the coroner's court. The "information" supplied to Dr. Atkinson simply stated where the deceased had died, how long she had been in the asylum, whence removed, and represented that she had had proper medical attendance during her illness—representations on the good faith of which the coroner's deputy at once decided to give a certificate for burial and hold no inquest. Subsequent information was, however,

conveyed, of a more pertinent and trustworthy character,* which induced the deputy coroner to telegraph to Dr. Smith, at the asylum, to stay the burial of the deceased, prosecute a *post-mortem* examination of the body, and prepare for an official inquiry to be held at Sedgefield.

THE INQUEST

Was opened at the Hardwick Inn (Mr. Thomas Charlton's), Sedgefield, on Monday morning, at ten o'clock. Dr. James Atkinson, deputy-coroner, attended; and the following gentlemen were sworn of the jury:—Mr. Joseph Barker Hodgson, foreman; and Messrs. John Cochrane, John Welburn, Thos. Emerson, Matthew Craggs, Joseph Flavell, Jas. Jarnett, J. H. James, John Oswald, Richard Lockey, John Mothersell, and George S. Johnson. C. Bramwell, Esq., Hardwick-hall, one of the visiting justices of the asylum, was present.

The coroner, after the usual formal opening, briefly referred the jury to the circumstances which had led him to hold the inquiry, as a justification of their having been summoned from their various avocations. At first, from the report he had received from the county officers at Sedgefield, he had decided that no inquest was called for; but, from information he subsequently received of the strong suspicion and strong feeling entertained by several persons, as to the supposed cause or causes of death, and as to the necessity existing for public inquiry, he decided that it was his duty to institute that inquiry. He was borne out in this opinion by one of the resident justices of the peace for the county resident at Hartlepool, who was also chairman of the Board of Guardians there, and the magistrate who had signed the order for the removal of the deceased from Hartlepool to the Sedgefield Asylum; and he therefore felt confident that they were met to make an inquiry strongly called for by public opinion, and which he hoped would be prosecuted, as their oath required, to "the best of the skill and knowledge" of the very respectable and intelligent jury to whom the facts would now be submitted.

The jury, accompanied by the coroner, then proceeded in a body to the dead-house of the Lunatic Asylum, where the body was viewed. On their return the examination of witnesses proceeded as follows:—

Robert Davidson, labourer, Hartlepool, sworn, said: "The deceased, Catherine Davidson, was my wife. I have seen her body since death. She was, to the best of my knowledge, twenty-seven years of age. It will be five weeks next Tuesday (to-morrow) since she was taken poorly and took to her bed. She said to me it was her first child (she was in labour), and she would like to have a doctor, as she knew nothing about it. I never intended sending for a midwife. I intended to have a doctor; but, when I arrived from my work, I found a woman, named Mrs. Brockies, at my house, attending my wife: where she remained all night and until five o'clock in the afternoon of the following day (Wednesday). At four o'clock on the Wednesday afternoon, I asked this woman, who acted as midwife, Mrs. Brockies, if there was any danger, and she said 'No, none.' That was about an hour before my wife was delivered. I slept in a neighbour's house on Tuesday night. When I came in at midday on Wednesday, my wife looked at me and shook her head at me, and seemed as if she did not wish to speak. I rose from the table then, and went out, saying to Mrs. Brockies, as I did so, 'I do hope it will be over before night.' In consequence of Mrs. Brockies saying there was no danger, however, I did not try to procure further assistance. The child was born about five o'clock on Wednesday. I was not in the house when the child was born. When Mrs. Brockies had left the house, I went to see my wife, when she said to me, 'Oh, Robert, if I had told you at dinner-time! You ought to have got a doctor, for I am killed.' She told me after, that she did not speak to me at dinner-time

* Here, justice to the officer who delivered the information to Dr. Atkinson requires us to say that he was not to blame for the imperfections of his statement. Living near the place of death, he was far removed from the place of suspicion. He gave such information as he then received. Public justice demanded that suspicion should give place to knowledge; and the coroner's court, as we have all along maintained, could better secure this than *the most accessible hearsay*, which, by his instructions, the policeman is forced to accept and communicate.

for fear of hurting my feelings. I did nothing then but sit down beside her and fret. Mrs. Brockies continued to attend my wife for a week after; and a woman, named Dolly Shafforth, was got to attend her, and to dress her three times a-day. I asked my wife how she was injured, when she said, 'I am torn all to pieces.' That was after she had talked about not having had a doctor. The child was born alive and lived ten days. I know why Mrs. Brockies gave over attending my wife. She was in the habit of sending cayenne tea for my wife; and every time my wife took it she vomited it; and my wife appeared to get the longer worse—getting paler and paler, and weaker and weaker. That being so, I went for Mr Moore, surgeon. He was not at home; but his brother attended. As soon as he looked upon my wife, he said he would have other assistance; and he left, but returned immediately, with Dr. Botham. After Dr. Botham had been to my house, I went to a shop in Northgate-street, Hartlepool, kept by Mrs. Brockies. I said to her, 'Now, Mrs. Brockies, my wife is no better.' She replied, 'She was a great deal better this morning.' I told her 'I hoped she was now—thanks to the medicine the doctor had given her, she seemed now to have had a turn.' She said I had better pay her her bill; and, when I told her that I had no money, she said, 'Well, you're like all other ungrateful people when your turn is done.' Dr. Botham brought Dr. Green with him; and both of them subsequently attended my wife. She was subsequently removed to the sick-house, or parish-hospital, in the Friarage, Hartlepool. I was present when the child died, at a quarter past six o'clock on one morning—I think the Saturday morning, ten days after its birth—never having taken the breast. Mr. Botham was in attendance. After the child died, my wife became insane, and continued so. She was removed from Hartlepool Friarage on the 24th of August, Wednesday last, to the asylum at Sedgefield; and I did not see her again alive."—In reply to a juryman, witness said: "It was in my own house, at the dinner hour, that my wife looked at me from the bed, when I was just within the door, and shook her head so sorrowfully at me, but never spoke. It was at four o'clock on the afternoon of that same day I asked Mrs. Brockies if there was any danger. I asked her that twice. The first time she did not answer me; the second time she answered, 'No, none.'" —By Mr. Brammell (through the Coroner): "My deceased wife showed no symptom of approaching madness, at her confinement, nor, to the best of my knowledge, ever before. It was not my wish to have the midwife (Mrs. Brockies) brought to attend her. After my wife was removed by the parish authorities to the Friarage poor-house, at Hartlepool, with the exception of the Sabbath, I went every day at two o'clock to see her. At three successive visits she did not know me."—After the examination of this witness had been concluded, he added to the foregoing evidence: "It was on the Tuesday night, at near five o'clock the child was born. My previous statement as to the time was wrong; but I now recollect the date perfectly."

Elizabeth Trenholm, wife of William Trenholm, shipwright, Hartlepool, sworn, said: "Five weeks to-day, on Monday (July 25th, I think, but I do not remember the day of the month), I was sent for to attend Mrs. Davidson, the deceased, who lived in the upper part of the same house. The house is one of a row, let out in tenements, known as "Robson's-buildings," at Hartlepool. I found her in pain, and remained with her all that night, and up till six o'clock in the afternoon of the following day. I had then to leave to give my son his tea, in an adjoining tenement of the same house; and the child was born after I left her. I found no one but my daughter with her when I went on the Monday evening; but several times I went to Mrs. Brockies, the midwife, who returned with me to visit deceased, but did not examine or interfere with the deceased then, on account of the insufficiency of her pains. She did not examine her at all during the night of the day spoken of; but she remained with the deceased all night. About two o'clock on the afternoon of Tuesday, the deceased complained. The labour pains then evidently came on, and were very severe. The deceased made no remark to me, and

made no complaint about Mrs. Brockies, during the progress of the labour. I have several times attended confinements before. To the best of my knowledge and judgment, Mrs. Brockies used her hands, and 'tewed' the patient, far too much on this occasion. I never saw any one use their hands so much. After the confinement, deceased complained of great pains in the back and lower part of the body. I told Mrs. Brockies of this; but she took no notice of the complaint. Mrs. Brockies remained a short time after the birth of the child and then left. The deceased then still complained of the severe pains. I told Mrs. Brockies again of it; but she said 'it would go away in a few days.' Mrs. Brockies attended daily for about a week after that. She had administered, during the labour, doses of cayenne tea; and, subsequently, she gave a kind of medicine she called 'coffee' —a powder, I don't know what it is— after taking which the deceased was very sick. Mrs. Brockies persisted in administering this, notwithstanding the sickness that always followed. I waited upon the deceased after her confinement. I never examined the deceased, nor washed her: another woman, Dolly Shafforth, did wash her; and the doctors came, when there was no necessity for my examining her. Deceased was removed from my house to the Friarage Hospital, at Hartlepool, a fortnight ago come Wednesday morning." —By a juryman: "I have attended labours of all kinds, protracted labours as well."— By the coroner: "Mrs. Brockies only administered the powder before the labour, not after. The deceased had got advice and medicine of Mrs. Brockies before she took to her bed, and her husband knew that she was expected to attend. Deceased had been a fortnight only in my house previous to her confinement; but, before she was at her confinement, she had told me her mother had been in a lunatic asylum eleven years. She was in a very destitute condition when she came to my house; and I had to supply her wants till some ladies of the town visited her, and brought her comforts, which they did."

Mr. Bramwell here observed that it was satisfactory to know that her wants had been attended to.

The next witness called was

Margaret Trenholm, wife of Frederick Trenholm, shipwright (son of last witness), who, having been sworn, said:— "I live in Robson's-buildings, Hartlepool, in the same house as that in which deceased was confined. I live in the two front rooms, and she occupied the two back ones. On the Monday, between four and five o'clock, I was in her room. She had called me in. She told me she thought she was in labour. My mother-in-law was frequently in and out of the rooms, while I staid with the deceased. I was there all night, with the exception of short intervals when I left to attend my own child; and I was also there the next day till the deceased's child was born. I should think that was about a quarter to six o'clock in the afternoon. I and the midwife were the only persons present at the birth. It was a very severe labour. During the labour, deceased made no complaint to me of Mrs. Brockies, but she suffered greatly. Mrs. Brockies said to me she would have to get some other assistance if deceased did not get any worse (meaning by that, if she did not make more progress with her labour). My mother, who was present when this was said, asked who she wanted to bring, and Mrs. Brockies said, 'Mr. Brockies.' Both myself and my mother said we would leave the room if she brought *him* there: and then Mrs. Brockies did not persist in bringing him, but she said he was as good as any doctor in the town. At that stage of the case, Mrs. Brockies was giving the deceased large quantities of a powder which she called 'coffee.' Deceased vomited it every time she took it except the last time. Both my mother-in-law and myself disapproved of the powder being given after having been so often vomited. Both my mother-in-law and myself objected to 'Mr. Brockies' being brought to attend the deceased. 'Mr. Brockies' is Mrs. Brockies' husband. He is a tailor. He is not a doctor, so far as I know—he is a tailor. I have been at confinements before. I have not been at many. I have been at confinements where medical men attended: and I have been at two before this, managed by this Mrs. Brockies. Mrs. Brockies did things at this confine-

ment very differently to what doctors usually do. She used her hands very much more than is usual. On my mother leaving the room for about fifteen minutes, Mrs. Brockies proceeded to do this violently, and almost pulled the child away—that is the truth!—when the pains were certainly not strong enough to give sign of delivery being at hand. The deceased was delivered sitting on the edges of two chairs, the deceased having her arm round my waist, and I my back to Mrs. Brockies at the time, so that I did not see the operation; but Mrs. Brockies appeared to use great violence, had no instrument of any kind to help her, and her hands were in a fearful state afterwards. After the confinement, Mrs. Brockies sent herbs to the deceased—I think on the following day; and these, when taken, never lessened, but always appeared to aggravate, the deceased's symptoms. She appeared worse after taking the herbs. I don't know what they were; and she was worse and worse ever afterwards. The instructions given with the herbs were that the deceased was to drink as much as she liked of them. I attended deceased, along with my mother-in-law, after the birth, till her removal. One of the powders given to deceased was dark-brown in colour. There were three kinds administered by Mrs. Brockies' instructions; one light in colour, and one much lighter than the dark-brown one. I would know them if I saw them again. That now produced (ergot of rye) is the same as one of those administered."

Mr. Bramwell was here offered (by the coroner) an opportunity of putting any questions he might wish to this witness, but declined; observing that he had simply attended there on hearing, from Dr. Smith at the asylum, that he (Dr. Smith) thought bad treatment had had more to do with the death of the deceased than the mania with which she was affected. It was, therefore, his (Mr. Bramwell's) own desire that the inquest should be held, that all the suspicions attaching to the case should be fully cleared up. It appeared to him the grounds of some of those suspicions were borne out by the evidence.

Examination continued.—By the jury: "I was in the house when Mrs. Brockies was sent for to attend deceased. Deceased's husband all along wanted to have a proper doctor. He did not want Mrs. Brockies; but deceased had had help from Mrs. Brockies before she took to her bed. I have been at confinements attended by Mrs. Brockies previously, but not by her husband. I knew of one where her husband attended, but was turned out of the house."—By the coroner: "When the child was born, the head appeared to be very much crushed. The skin was extensively torn off the head, and there was also a considerable discharge from it on the morning of the following day. We called Mrs. Brockies' attention to that, but she said, 'that would soon go away,' and sent some salve to dress it with. Deceased was quite exhausted, and did not speak, for a long time after the delivery. The powder produced was given to her frequently, up to a quarter of an hour before the labour; never after, to my knowledge. Deceased did not want for nourishment. She got whatever Mrs. Brockies would allow her to have. Mrs. Brockies said she was to have only tea and sago, and arrowroot, and those kind of things; and she got that."

James Waters, chief constable of the borough, sworn, said: "On Wednesday last, I received a written order from Mr. S. Robinson, one of the justices of the peace for the county of Durham, resident at Hartlepool, chairman of the Board of Guardians for Hartlepool Union, and mayor of the borough, to have the deceased removed to the asylum. The certificate of removal was signed by Dr. Botham. I procured a cab, and got a board put across the seats, had the whole level space thus formed carefully cushioned, and on this placed a feather bed, pillows, &c., on which the deceased was carefully carried from Hartlepool to the asylum. Mrs. Preston, matron of the hospital at Hartlepool, came with deceased, and occasionally gave her a little tea and so forth on the way. Deceased was in a secure and comfortable position on the journey; and, so far as I could see, she suffered nothing on the way. She was better than in the hospital; for I saw her there several times, when she was so

violent she had to have on a straight waistcoat. She did not struggle much on the way, but talked a great deal incoherently."

(To be continued.)

VARIETIES.

We should value life, not by its conveniences, but by the independence and dignity of our condition.

COMPANIONSHIP.—Though we were to visit the most sublime and beautiful terrestrial scenes, and be witness to every joy which their sparkling fountain affords; though we were to explore every star, and contemplate the mine of glories contained in the visible universe; could we enter the third heavens, and survey that indescribable sublimity which enraptures glorified seraphs; yet without a companion to share with us the contemplation, the stream of earthly joys would freeze and stagnate, the glories of creation would fade away, and even Heaven's exhaustless treasures would lose their captivating charms. The strongest argument which can be held out to man to cultivate his intellectual and moral powers, is that he shall enjoy the reward of his exertions in concert with the purest and most illustrious spirits that have ornamented earth, and that shall never cease to impart their benefits in a world that never dies.

ALCHEMY.—We know now as facts many things which are hardly less wonderful than the visions of those interesting dreamers the alchemists. We know, for instance, that gas, a fluid and a solid, may consist of the very same ingredients in different proportions. We know that the same elements, with one or more atoms of water, form different substances. We know that a virulent poison may differ from a wholesome article of food only in the difference of quantity of the very same ingredients. We know that gold and silver, and indeed all the metals, may be extracted from transparent crystals, which scarcely differ in their appearance from a piece of common salt or of sugar-candy. We know that *aluminium*, a metal with almost all the valuable properties of gold and platinum, can be extracted from clay; that lights of the most dazzling colours can be obtained from the combustion of colourless salts; that gas, giving the most brilliant light, resides in a lump of coal or block of wood; and that the diamond is nothing more than the purest form of carbon, and therefore is identical with charcoal in respect to its primary substance. After these considerations we need not wonder at the hopes that were entertained of procuring from the basest materials the most precious metals, and even gems.

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Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 43.

ON THE DISEASES OF THE ABDOMEN.

Tumours of the Organs of the Abdomen.—Dr. Henoch takes up, in the first place, *the diseases of the liver*, of which enlargement or tumour is a prominent indication. Before entering, however, upon the subject of the true diseases of the liver, the reader is very properly warned, that it is not enlargement of the organ alone which can give rise to palpable tumour below the margin of the ribs, or to extended dulness upon striking it gently. Causes acting upon the liver from without, such as a habit of tight-lacing, may so flatten and lengthen the organ, and contract the space of the chest, as to cause the exhibition of both of these physical signs of enlargement. Diseases in parts adjacent to the liver may also have the effect of displacing it, and of pushing it downwards, upwards, outwards, or laterally, according to the structures they affect and the amount of pressure they exert. In distinguishing *dislocation of the liver* downwards, in consequence of pleuritic effusion from enlargement of the organ by disease, Dr. Stokes relies, among other signs, upon the presence of a furrow which may be perceived between the diaphragm and convex surface of the liver. Dr. Henoch however asserts, that he has noticed the same sign in cases of cancerous enlargement of the liver.

Hyperæmia (congestion of blood) and inflammation of the liver are the first conditions noticed as productive of enlargement of the liver. Any disease which impedes the pulmonary circulation, or produces overfulness of the right side of the heart, is an usual cause of congestion of the liver.

Except after traumatic (relating to a wound) injuries, acute inflammation of the liver rarely terminates in suppuration.

A result of congestion when excessive is that softening of the liver which medical practitioners have long known as occurring in the malignant fevers of Italy and India. But the blood is not the only fluid whose impeded flow out of the liver, or accumulation within it, may give rise to enlargement: the same thing may arise from the retention *of the secreted bile*, and its accumulation in the ducts within the organ. In all cases retention of bile is sooner or later accompanied by jaundice. A very important distinguishing feature of this affection is, that after a time the enlarged liver gradually diminishes in bulk, notwithstanding that all the remaining symptoms of the disease are unaffected, or become more marked in their character. The pressure of the retained secretion exerts its influence upon the nutrition of the essential elements of the organ; the capillary circulation becomes injured, and the vessels themselves became obliterated; while the cells become fatty and finally disappear. The necessary consequence is atrophy (a wasting of the whole body or a part of it) of the substance of the liver.

As an appendix to this article a concise description of the liver will be interesting to the general reader.

THE LIVER.

A large abdominal viscus, of a deep-red colour, situated under the diaphragm, in the right hypochondrium, its smaller

portion occupying part of the epigastric region. In the adult, it generally weighs from three to four pounds. In the fœtus, it is much larger proportionally than in the adult. The use of the liver is to secrete the bile. In the human body, the liver is divided into two principal lobes, the right of which is by far the largest. They are divided on the upper side by a broad ligament, and on the other side by a considerable depression. Between and below these two lobes is a small lobe called Spigelii. This is situated between the two greater lobes, but rather belonging to the right great lobe. From its situation deep behind, and from its having a perpendicular papillary projection, it is called also *lobulus* posterior or papillatus. To the left side it has the fissure for the lodgment of the ductus venosus, on the right the fissure for the vena cava, and above, it has the great transverse fissure of the liver for the lodgment of the cylinder of the porta; obliquely to the right, and upwards, it has a connection with the lower concave surface of the great lobe, by the lobulus caudatus, which Winslow calls one of the roots of the lobulus Spigelii. It is received into the bosom of the lesser curve of the stomach. On the under surface of the liver there are two small lobes or processes (viz.), the *lobulus anonymous* and *lobulus caudatus.* The lobulus anonymous is the fore point of the right lobe of the liver; others define it to be that space of the great lobe betwixt the fossa of the umbilical vein and gall-bladder, and, extending forward, from the fossa, for the lodgment of the vena portæ, to the fore margin of the liver. It is called also lobulus quadratus, and lobulus accessorius. The *lobulus caudatus* is a tail-like process of the liver, stretching downward from the middle of the great right lobe to the lobulus Spigelii. It is behind the gall-bladder, and betwixt the fossa venæ portarum, and the fissure for the lodgment of the vena cava.

PURIFYING OF WATER.—Water kept in a cistern had become tainted by dissolving lime and cement in it. M. Giraldin ordered 24lbs. of ivory-black, or animal charcoal, to be dissolved in it. In fifteen days the water was purified, and continued excellent.

ALLEGED DEATH FROM INCOMPETENT MEDICAL TREATMENT.

(Concluded from page 312.)

JOHN CARTLEDGE BOTHAM, Doctor of Medicine, and member of the College of Surgeons, on oath, said: "I am resident and in practice at Hartlepool. On the Monday after deceased's confinement, late at night — probably between ten and eleven o'clock—I was called in to visit her. I found her very feverish, with symptoms of inflammation of the womb and adjacent parts, the tongue foul, and pain on pressure of the abdomen. I made no examination that night. On a subsequent day, I made a particular examination, when I found the vagina or fore-body and the rectum or back-body were joined by an extensive rent in the separating membrane, and, consequently, that the excrement from the back passage passed through the front. There was a good deal of inflammation of the external genital, and also a tendency to slough, though that did not then occur. There was also some incontinence of urine, the fluid coming away every time the patient coughed, which was frequently. Excrement was daubed all over the bed, which added to the soreness of the patient, who was cleaned two or three times a day, without being kept even then sufficiently cleaned. Seeing the serious nature of the case, I called in another practitioner, Dr. Green, Hartlepool. Under our joint treatment the patient seemed slowly to improve; but her recovery was much retarded by the difficulty of keeping her clean. About a week after I first saw deceased, she showed symptoms of approaching mania. She was a week longer in my charge after those symptoms first showed themselves, when Dr. Moore (who is parish surgeon) and I jointly attended her, up to the time of her removal to the asylum. I gave the certificate for the order for her removal. I saw the child of deceased. It died about a week after I was first called in to visit the mother. It had the marks on the head usual after birth; but, on one side, near the crown, were excoriation and lacerated places. Before it died they were nearly healed. It was by no means a large child: it was a fair average size. The excoriation might have been the result of violence. I am

not prepared to say that it was caused by the violence at the birth. I am not prepared to say that the mania of the mother was solely caused by the injuries she had received. She was, no doubt, very much excited, for she thought she had been very ill-treated by the midwife. But I was informed, by the relieving officer at Hartlepool, that her mother had mania after every child, and died at last, after having been confined eleven years, in a lunatic asylum. I signed the certificate for her removal here in conjunction with Dr. Moore, who signs all orders for the removal of pauper lunatics. I cannot at present give a specific opinion as to the cause of death. I am in some doubt from not having the details of the *post-mortem*. Had I those details, I could give an opinion, but would not venture to speak decidedly on that point without them."

Mr. Bramwell here observed that there had been some delay in ordering the *post-mortem* to be made; and Dr. Smith had been at a loss how to act.

The coroner explained, that in consequence of the deficient information supplied to him, in the first instance he had decided to hold no inquest; but, from information subsequently laid before him, he decided to do so, and on his own responsibility, as the body was rapidly decomposing, telegraphed to Dr. Smith yesterday (Sunday) morning, to proceed with the *post-mortem* examination.

John Cartledge Botham (examination continued):—"At the lower part of the perinæum, the laceration was complete when I first examined the deceased—it was completely torn through; and that extended back, I should think, about an inch and a-half. With a child of the size born, I think nothing but unskilful treatment could have caused so serious a rent. The party having the management ought not to have used any force at all in a natural labour. The mania very much reduced the deceased's chances of recovery. Puerperal mania is, of itself, occasionally a fatal disease. Deceased, when so afflicted, became unmanageable; and that very greatly interfered with her recovery."

Robert Smith, Doctor of Medicine and surgeon, and also Medical Superintendent of the Durham County Lunatic Asylum at Sedgefield (who had not been present at the taking of the foregoing depositions), was then called in and sworn. He said: "On Wednesday, August 24th, the deceased was brought to the asylum. She was very much excited, and very feverish. I observed nothing more at the time of her arrival. Towards morning—between four and five o'clock on Thursday morning—she became much worse; so much worse that I was called to see her. I found her much exhausted, and evidently sinking—sinking fast. She died about nine o'clock—a little before nine—having been in the asylum in all about twenty-one hours. I have since made a *post-mortem* examination of the body, and can describe what I found as bearing on the cause of death. Before using the scalpel, I examined the body externally. I found general discoloration all over the body, with decided blackness about the region of the organs of generation, where there appeared to be superficial sloughing. There was laceration about the vagina. The perinæum was quite gone, as was also upwards of an inch of the membrane between the vagina and the rectum. On internal examination, I found the flesh of the uterus was bruised and of a dark colour, and the uterus was about three times its natural size. The bladder was quite healthy, except that there seemed to be slight inflammation of the urethra; but there was no lacerated fissure there. I examined all the other cavities of the body. The left lung was slightly condensed, evidently the result of former disease; the right kidney was engorged; and the heart was, but very slightly, diseased, shewing a slight tendency to fatty degeneration. There was nothing else to attract attention. I should think the wound in the perinæum not sufficient, by itself, to account for the deceased's death. I have not devoted much of my time or attention to midwifery, and am, therefore, perhaps, not qualified to speak with authority on the subject; but I should think that, with a very rapid birth, laceration of the perinæum might have occurred, even in the hands of a skilful practitioner. I should add to the *post-mortem* appearances that the upper portion of the rectum, in fact the whole

of the rectum above where the rent had been made, was filled with hardened fæces. There was nothing else met with, calling for the attention of the jury. In my opinion, the removal of the patient to the asylum, at the time and under the circumstances it was ordered, was perfectly justifiable. In my opinion, the death of deceased occurred from exhaustion. I have had a great deal of experience in the treatment of insanity. Such a termination as that here presented is very frequent."

The coroner (to the medical witnesses):—"From two to five o'clock was a very 'rapid birth;' but a medical man, instead of having forced it, would have waited the effects of a more mature and natural labour."

Mr. Botham:—"He would. No force should have been employed in such a case. I have to add to my former evidence that, having heard Dr. Smith's evidence, I am now prepared to offer an opinion as to the cause of death. It is my opinion that neither the laceration inflicted at the delivery, nor the mania are to be regarded as *the* cause cause of death; but that both combined have brought about that termination."

This concluded the evidence; when

The coroner reviewed the facts proved, severely censuring the conduct of the woman who had acted as midwife in the case, for having, contrary to all practice and scientific rule, resorted to the use of violent stimulants and still more violent manipulation, in this particular case—errors which indicated gross ignorance and incompetency; but, at the same time, pointing out the fact that the injury then received by the deceased, and which in more difficult cases might have occurred even in the hands of the most skilful, might have been ultimately overcome, but for the insanity which had supervened, and for which they could not hold any one accountable."

The jury, after a few minutes' consultation, returned as their verdict:—"Died from exhaustion, produced by various causes. The jury sincerely regret that persons should employ unqualified practitioners"—the foreman adding verbally, as he submitted the verdict, that they were unanimous in regarding this case as shewing that the evil results of employing ignorant and incompetent persons in the capacity of medical men must inevitably be felt most by those who so employ them; for if the incompetent do their best, how were they to be blamed?

This terminated the proceedings.

To the Editor of the Botanical Journal.

Sir,—I write this as a private letter, which, if you think proper, you may show to Dr. Coffin, Mr. Ford, or any other party; and my intention is to give full particulars of the circumstances which occasions me to send this letter, and if Dr. Coffin will allow its insertion in the Journal I shall be much obliged, for I believe the whole case requires much scrutiny.

The doctors commenced their persecution of us owing to some heavy comments upon them (at the time of Palmer's case of poisoning) appearing in the Journal, under the title of "A Mare's Nest at Hartlepool." This apparently furnished grounds for their animosity, and meetings were got up with a design to crush Mrs. Brockies and myself, under the plea of my adopting the title of Medical Botanist. However at this point I stopped them. Mrs. Brockies has been in practice as a midwife since 1850, and has been very successful—the register book of births proving that she has had five cases to the doctors' one. This is another cause of their anger; and the case of Mrs. Davidson that I am about detailing apparently afforded them a favourable opportunity to put their designs in practice.

In the beginning of July, Mrs. Davidson sent for Mrs. Brockies to attend her at her accouchment. Mrs. Davidson became ill. Mrs. Brockies went, saw and told her the pains were false, sent some raspberry-leaves, with aperient pills. Mrs. B. heard no more of her till about the 20th instant. Mrs. B. went, and informed Mrs. D. her labour was not enough advanced to render her any assistance. Allow me to say, that during this time, Mrs. D. had been to Dr. Stamp to engage him to attend her at her accouchement. The doctor would not attend her because she had not his money ready for him, and then, as the only resource, she flew back to Mrs. B. for her safety. We did not hear this till after. Mrs. B. called

on the 25th, Monday, and stayed all night. The patient was very unruly and excited. Mrs. B. came home next morning at eight o'clock to refresh herself, and returned direct, having administered nothing up to this time but the raspberry-leaf tea, with a small portion of cayenne, about half a teaspoonful; during the morning gave lobelia, which the witness calls coffee, and at one o'clock at noon, on the 26th, labour advanced, and the head of the child was wedged in the pelvis; waited patiently for nature till three o'clock, and between that and four o'clock gave the compound powder used by us. And here allow me to say, all praise to Dr. COFFIN for this invaluable gift; for it is far before any forceps in bringing the head of a child through a contracted pelvis. The ingredients are raspberry-leaf tea, among which are put No. 1 and No. 2, and united with composition powder, of which she gave the patient freely; and this is the powder that was described by one witness far lighter than the dark brown, informing the jury she would know it again if she saw it.

"ERGOT OF RYE" is that deadly product used by the faculty—not by Dr. COFFIN'S agents—with other poisons I could mention, that has slain its tens of thousands, no one taking a thought the cause thereof. And would I be guilty of giving this over my counter to a strange person, after having sworn that I will never countenance the use of it or any other poison in any shape or form? No; for as they are deadly in health, where is the science of giving them in disease? In the words of Milton, "Let truth and falsehood grapple. Who ever knew truth worsted in a free and open encounter?" How long shall our courts and coroners' juries abound with false witnesses? For even one of the female witnesses said, "I know one place where Mr. Brockies attended a case of labour, and was turned out of the house." This I deny. Here is a case of perjury. But to return to my subject: The patient was removed on two chairs, with the same witness beside her, holding to the bed-pole, and no one else in the room; being delivered safely by five o'clock; observed the head of the child bruised. Now how could this Margaret Trenholm see all that was done with her back to Mrs. Brockies? The child's head was attended to, and the female made no particular complaint, only against her husband's conduct, till the Sunday. Mrs. Brockies observed her very feverish and excited, and gave her medicine. She seemed a little better on the Tuesday, August 2nd. The husband came to the shop and told Mrs. B. her services were not required any more, as he had two old-school doctors in. I was away at Derby. She asked him if he had got her money ready. He said, "No." To which the reply was, "You are like all ungrateful people after your turn is served." We found, after this, the doctors and him were setting false rumours, most horrible, afloat. The place got that warm I could not walk the streets without first one and then another calling me a murderer. This raised the steam, and I issued a hand-bill, challenging the heads concerned in this plot to meet me and the public face to face, which was treated with contempt. Allow me to tell you, the priest that was praying with her and a lawyer's wife became very busy telling their version of the affair in every house they went. After the bill was issued, I issued a statement in full on the 20th, and sent it to Mr. Ford, sent it to the "Free Press" and "Mercury," to give the bearings of the case. Next I received a letter of legal proceedings from the London Registration Society for practising and using initials, information having been communicated to them, affording me the opportunity of clearing myself by a private letter. It seemed to satisfy them, sending a short one back, that if I still persisted to practise, they would prosecute. Of this I took no notice. About the 18th instant she was removed to the hospital at Hartlepool, and on the 24th was removed to Sedgefield Asylum in a cab—a rugged road of about eighteen miles from Hartlepool—and died in the asylum next day. Here again is science. I heard the husband had gone to see her buried, and there was to be no examination; but since, or on the Monday about noon, I heard the husband had come to inform the superintendent of police to procure witnesses, and they had all gone that morning, not coming for any of us or letting us know. There was a convey-

ance hired at the town's expense: doctors and witnesses against us proceeded to overthrow and get a committal if possible. Allow me to say, the coroner was a doctor from West Hartlepool; the doctor, Botham, who was a witness, was the one who attended upon Mrs. Davidson after Mrs. Brockies was dismissed. Trusting these particulars will give you an insight into the case for the agents generally, and allow me to say it was too late for me to hear the inquest, the conveyance being such I should not have been able to have been there till all was over. Observe the evidence of Mr. Smith, doctor of the asylum, that laceration of the perinæum or soft parts might have occurred in the hands of the most skilful. Observe, again, the coroner following the doctor of West Hartlepool. How patient they are! What! would he have used the instruments and gave ergot of rye? Had not Mrs. B. waited patiently about four-and-twenty hours? What were to be the signs of a more natural labour, after the head being wedged four hours? Observe him again, and consider the verdict of the jury! And where was the need of this censure from the jury? Had they heard our evidence, then they might have seen all the bearings, and then they might have said, "If the incompetent be called in, and they do their best, how were they to be blamed?" Allow me to say, I have broke no laws, common or statute, in practising pharmacy. Neither has Mrs. B. in practising midwifery with success, even after attending and doing good to patients after others refused to attend; and if doctors must risk their patients to live, who would practise? In the words of Blackstone, who says, "Where no malice is, no action lies." But to finish. To yield to any authority would here be criminal. Facts must and will stand, Dr. Underwood. Here is a question for all botanists to solve before commencing practice. I, for one, am determined, like the Methodists of old were in reference to the church, sooner than to yield to any monopoly, to choose the stake and die a martyr, my only desire being the alleviation of human suffering.—I remain, Sir,

Your humble servant,

THOMAS E. BROCKIES.

Northgate Street, Durham, September 6, 1859.

TREATMENT OF THE CASE OF MR. GEORGE ELLIOTTE

REPORTED IN OUR LAST.

To the Editor of the Botanical Journal.

SIR,—You will greatly oblige me by giving a place in the columns of your Journal to the following:—

Mr. J. G. Elliotte came under my treatment on the 29th of July, when I prescribed this medicine:—Horehound, hyssop and vervain, equal parts; a teaspoonful of valerian and half a teaspoonful of cayenne. Dose, a dessertspoonful every half hour.

30th. Much relieved; breathing comparatively easy; can lay down; cough and expectoration much the same. Expressed a desire for food; ordered anything he could fancy but animal substance and intoxicating drink. Continued medicine, a dessertspoonful every hour.

31st. Cough easier; expectoration much diminished, but continued streaked with blood. Complains of a dull pain in the small of the back. Change of medicine:—Centaury, clivers, horehound, gum arabic, juniper-berries, and licorice-root, equal parts, with half a teaspoonful of cayenne. Dose, two tablespoonfuls every four hours.

August 1st. Kidneys quite free from pain; cough much improved; expectoration considerably less. Expressed a desire for animal food; ordered to eat sparingly of lean broiled mutton. Continued medicine.

2nd. Continued to improve; cough almost well; expectoration much less, with no blood and free from pain; has set up nearly all day. Continued medicine.

3rd. So much improved that he ventured out; is quiet, cheerful, and free from pain; appetite good, and sleep sound. Continued medicine.

4th. Much worse, caught cold by venturing out too soon; a slight return of inflammation; cough troublesome, with increased expectoration with blood; ordered to remain in bed. Medicine:—Yarrow, horehound, hyssop, equal parts, boiled in one pint of water and poured on to half an ounce of composition powder; the whole pint to be taken in three doses. I likewise made a syrup of comfrey-root, ginger, horehound, nutmeg and cayenne; a teaspoonful to be taken every hour.

5th. In a nice perspiration; lungs again free from pain; expectoration less, but slightly streaked with blood. Continued syrup.

6th. Continued to improve; feels stronger. Continued syrup, one tablespoonful three times a day.

I gave nothing but the syrup from the 6th to the 21st of August, on which day he declared he felt better and stronger than he had felt for more than three years. He left Scarborough for Bridlington, on the 22nd of August (from which place he wrote the letter), on his road home to Newark.—I remain, yours truly, GEORGE HALL.

P. S. I ordered all the medicines to be well sweetened with coarse sugar.

Scarborough.

ON THE MOUTH, SALIVARY GLANDS, &c., &c.

IN the seventy-seventh page of No. 277, we gave an article on the ear. We now proceed to give an article upon a most important assemblage of organs, without which hearing would be comparatively valueless. Thus premising, we begin with

THE MOUTH.

The mouth is that cavity anterior to the velum or fleshy palate; the posterior cavity is the fauces; the mouth is for mastication and speech, the posterior cavity is a common passage, admitting the food to be conveyed into the œsophagus, and the air to be drawn in from the nostrils into the trachea.

The lips and cheeks are formed of the skin and reflected mucous membrane, with muscular fibres intervening to give them pliancy and motion, and with minute glands to discharge the moisture on their inner surfaces.

The glands of the lips are called glandulæ labiales, and are very numerous; those of the cheeks are called the glandulæ buccales.

OF THE TONGUE.

The body of the tongue consists of muscular fibres, with intermingled fat and cellular membrane, nerves, and blood-vessels.

The base of the tongue is that part which is backward, and is connected with the os hyoides: the apex is anterior.

The surface applied to the roof of the mouth is called dorsum. On this surface there is to be observed a middle line, dividing the tongue into two lateral portions; a division which is very accurately preserved in the distribution of the blood-vessels and nerves of eit side. On the dorsum, towards the base, the surface is rough with the papillæ maximæ and foramen cæcum Morgagni. These papillæ are like small glands, seated in little superficial fossulæ, so that their broad, mushroom-like heads alone are seen; but they are connected with the bottom of the fossulæ by short stems or necks. This is considered as a glandular apparatus. The foramen cæcum is, in truth, only an enlarged apparatus of the same kind, for, in the bottom of this foramen, many glandular papillæ stand up; and in its bottom small foramina have been observed, which are generally conceived to be the mouths of small salivary ducts. Morgagni himself, however, seems only to have seen a small duct opening into this foramen, in one subject of many which he examined. In Haller's "Opuscula" there is a dissertation on the ductus Coschwizianus, which was supposed to carry the saliva from the sublingual gland to the middle of the tongue, and also into the throat, but it turns out to be a vein only. It is curious to observe the necessity the author discovered for these ducts, when he thought he had found them. The secreting mucous surface begins here, towards the root of the tongue, to resemble the glandular structure of the œsophagus, which, by bedewing the surface of the morsel, fits it for an easy passage through the gullet. This roughness of the root of the tongue is, at the same time, a provision for the detention of the sapid particles, and consequently prolonging of the sensations of taste.

The papillæ of the human tongue are divided into four classes. 1. Those larger papillæ upon the root of the tongue are the truncatæ; and they are often studded on the dorsum of the tongue in a triangular form. 2. The fungiformes are obtuse papillæ found more forward on the tongue; they are little, hemispherical, tumid papillæ, with an obtuse surface. These are interspersed among the third

division, the most numerous and universally prevalent papillæ, viz., villosi or conoidæ; they are, as Soemmerring says, of various forms, angular, conical, obtuse. 4. The vaginatæ are the more important papillæ, however; they are endowed with peculiar sensibility to sapid bodies; are to be distinguished by their superior redness and brilliancy, and are placed upon the point and edges of the tongue.

The tongue is invested with the cuticle and rete mucosum, like the skin in other parts. The lower surface of the tongue is similar to the general lining membrane of the mouth, being a soft, villous and secreting surface. It is reflected off upon the bottom of the mouth, where it forms the frenulum linguæ. This ligament seems evidently intended to limit the motion of the point of the tongue backwards. A very false opinion has prevailed, that the shortness of this ligament, or its being continued too far forward toward the point of the tongue, prevents the child from sucking. The tongue, as I conceive, would sufficiently perform the necessary action on the mother's nipple, although its lower surface were universally adhering to the bottom of the mouth. But, observe the bad consequences which may arise from yielding to the obstinate importunity of the nurse, and cutting this frenulum. The ranine vein or artery which runs near it may be cut, and the child will continue sucking and swallowing its own blood; and children have actually died, and the stomach has been found distended with blood! But there is another more dreadful accident from this cutting of the frenum linguæ. A child, says M. Petit, whose frenum had been cut almost immediately after its birth, was suffocated and died five hours afterwards. They believed that the operation was the cause of the child's death; they sent for me to open the body. I put my finger into its mouth, and I did not find the point of the tongue, but only a mass of flesh which stopped up the passage from the mouth into the throat. I cut up the cheeks to the masseter muscles, to see what had become of the tongue. I found it turned like a valve upon the fauces, and the point actually swallowed into the pharynx. "Some time after," continues M. Petit, "I was called to the child of M. Varin, Sellier du Roi, whose frenum they had cut two hours after its birth, and who, a little after, had fallen in the same situation with the child I have now mentioned, and was nearly suffocated. My first care was to introduce my finger: the tongue was not, as yet, entirely reversed into the throat. I brought it back into the mouth; in doing which, it made a noise like a piston when drawn out of its syringe." M. Petit waited to find the effect of its sucking, and after hearing the action of deglutition for some minutes, the child fell again into the same state of suffocation. Several times he reduced the tongue, and at last contrived a bandage to preserve it in its place; but, by the carelessness of the nurse, the accident recurred, and the child was suffocated during the night. There can be no better illustration of the use of the frenum linguæ.

OF THE SALIVARY GLANDS.

The sources of the saliva are very numerous; the parotid or superior maxillary glands, and sociæ parotidis; the inferior maxillary or submaxillary glands; the sublingual glands; and (according to the opinion of many) the glandular follicles of the root of the tongue, the palate and even the buccales and the labiales, or glands of the cheeks and lips, are also to be enumerated, as sources of saliva. But the chief source of the saliva is in the proper salivary glands.

The parotid gland, as its name implies, is that which lies near to the ear. It is the largest of the salivary glands; and it is of much importance for the surgeon to observe its extent and connections. A great part of it lies before the ear, and betwixt the ear and jaw. It extends over the masseter muscle, and upwards to the zygoma. But there is also a great part of it which lies below the tip of the ear, and betwixt the angle of the jaw and the mastoid process. Its surface is unequal, and composed of little masses or lobules of gland, united by a cellular membrane. The duct of this gland was discovered by Needham, and afterwards by Steno: it is very often called Steno's duct. When it is injected with quicksilver, the branches are seen distributed in a most beautiful and minute manner

amongst the lobuli of the gland, like the branching of veins. These branches have a direction upward from the gland, and unite into a trunk, which passes from the upper part of the gland across the cheek over the origin of the masseter muscle; it then pierces the buccinator muscle, and opens upon the inner surface of the cheek, opposite to the second dens molaris. This duct has strong white coats; but, although the mouth of the duct is very small, the duct itself is dilatable.

The socia parotidis is a small gland, not constantly to be found, seated on the upper side of the duct of the parotid gland, and just under the margin of the cheek-bone. It opens by a lesser duct into the greater duct of Steno. Sometimes, however, instead of one considerable gland, there are several small ones, seated in the course of the great duct, and opening into it by several minute ducts.

The submaxillary gland is of a regular oval figure, and is seated under the angle of the jaw; it lies under the platysma myoides on the tendon of the digastric muscle; it is defended by the angle of the lower jaw, where it is generally connected with or involves the root of the facial artery. It is regularly lobulated; and its duct passes forward between the genio-glossus and mylo-hyoideus, and under the sublingual gland. The opening of the submaxillary ducts, or ducts of Wharton, are very easily distinguished. They open under the tongue very near each other, on each side of the frenum linguæ; so that they appear as if tied down by the frenum. When these are excited to discharge their fluids, they become a little erected; their open mouths are seen distinctly, and even the tortuous course of their canal in the bottom of the mouth may be seen.

The sublingual gland is of a flat and elongated form; it lies close under the tongue between the genio-hyo-glossus and mylo-hyoideus muscles. It is the smallest of the three great salivary glands. The two sublingual glands stretching close under the tongue, are separated from the cavity of the mouth only by the membrane of the mouth. The duct of the sublingual gland opens into the duct of Wharton at the same time that it opens by small lateral ducts, with loose pendulous mouths upon the lower surface of the tongue.

The glandulæ molares are seated betwixt the masseter and buccinator muscles: they properly belong to the class buccales. These are small glands, in some measure incorporated with the cheek. The glandulæ labiales are more distinct, and can be insulated by dissection: they are round and flat, and sunk in the substance of the lips. All these glands secrete into the mouth.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

To Revive Old Writing.—Boil gall-nuts in wine, then, with a sponge dipped in the liquid, wipe over the lines of the old writing, and all the letters will appear distinctly visible. This should not be attempted with documents that are to be preserved, as it has a tendency to destroy the material. But when it is required to decipher any old writing in order to copy it, the recipe will be useful.

A TABLE OF THE ENGLISH AND SYSTEMATIC NAMES OF MEDICINAL PLANTS.

(Concluded from page 299.)

Mezereon	Daphne Mezereum.
Mulberry, Common	Morus Nigra.
Mullein	Verbascum Thapsus.
Mustard, Black	Sinapis Nigra.
Mustard, White	Sinapis Alba.
Myrrh Tree	Balsamodendron Myrrha.
Nutmeg Tree	Myristica Moschata.
Nux Vomica, or Poison Nut	Strychnos Nux Vomica.
Oak, British	Quercus Robur.
Oak, Dyer's	Quercus Infectoria.
Oak, Pedunculated	Quercus Pedunculata.
Oats, Common	Avena Sativa.
Olibanum Tree	Juniperus Lycia.
Olive, European	Olea Europea.
Onion, Common	Allium Cepa.
Opoponax Plant	Pastinaca Opoponax.
Orange, Seville	Citrus Aurantium.
Pareira Brava Root	Cissampelos Pareira.
Parsley, Common	Apium Petroselinum.
Peach Tree	Amygdalus Persica.
Pellitory of Spain	Anthemis Pyrethrum.
Pennyroyal	Mentha Pulegium.
Pepper, Black	Piper Nigrum.
Pepper, Long	Piper Longum.
Peppermint	Mentha Piperita.
Pimenta, or Allspice Tree	Myrtus Pimenta.
Plum Tree, Common	Prunus Domestica.
Poison Oak	Rhus Toxicodendron.
Pomegranate Tree	Punica Granatum.
Poppy, Red or Corn	Papaver Rhœas.
Poppy, White	Papaver Somniferum.
Quassia Tree	Quassia Excelsa.
Savine	Juniperus Sabina.
Scammony Plant	Convolvulus Scammonia.
Scurvy Grass	Cochlearia Officinalis.
Sea Holly, or Eryngo	Eryngium Maritimum.
Sea Wormwood	Artemisia Maritima.
Seneka-root Plant	Polygala Senega.
Senna, Egyptian	Cassia Senna.
Simaruba Tree	Quassia Simaruba.
Spearmint	Mentha Viridis.
Spurge, Officinal	Euphorbia Officinarum.
Sorrel, Common	Rumex Acetosa.
Southernwood, Common	Artemisia Abrotanum.
Southernwood, Tartarian	Artemisia Santonica.
Spearwort, Lesser	Ranunculus Flammula.
Squill, or Sea Onion	Scilla Maritima.
Stavesacre	Delphinium Staphisagria.
Storax, Common	Styrax Officinale.
Sugar Plant	Saccharum Officinarum.
Sumach, or Poison Oak	Rhus Toxicodendron.
Sweet Flag, Common	Acorus Calamus.
Swietenia, Febrifuge	Swietenia Febrifuga.
Tamarind Tree	Tamarindus Indica.
Tansy, Common	Tanacetum Vulgare.
Thorn Apple	Datura Stramonium.
Tobacco, Virginian	Nicotiana Tabacum.
Tormentil, Common	Tormentilla Officinalis.
Tragacanth	Astragalus Verus.
Turmeric	Curcuma Longa.
Turpentine Pistacia	Pistacia Terebinthus.
Valerian, Common	Valeriana Officinalis.
Violet, Sweet	Viola Odorata.
Virginian Snake-root	Aristolochia Serpentaria.

Wake-robin, Common	Arum Maculatum.
Wall Germander	Teucrium Chamædrys.
Water-dock, Great	Rumex Aquaticus.
Water-parsnip, Creeping	Sium Nodiflorum.
Wheat, Summer	Triticum Æstivum.
Wheat, Winter	Triticum Hybernum.
Willow, White	Salix Alba.
Willow, Round-leaved	Salix Caprea.
Willow, Crack	Salix Fragilis.
Winter Cherry	Physalis Somnifera
Winter-green, American	Chimaphila Corymbosa.
Winter's-bark Tree	Wintera Aromatica.
Wood-sorrel, Common	Oxalis Acetosella.
Worm-grass, Perennial	Spigelia Marilandica.
Wormwood, Common	Artemisia Absinthium.
Zedoary, Common	Curcuma Zedoaria.

Quince Tree	Pyrus Cydonia.
Red Saunders Tree	Pterocarpus Santalinus.
Rose, Dog or Wild	Rosa Canina.
Rose, French or Red	Rosa Gallica.
Rose, Provence	Rosa Centifolia.
Rosemary, Common	Rosmarinus Officinalis.
Rhatany, Medical	Krameria Triandra.
Rhododendron	Rhododendron Chrysanthum.
Rhubarb, Palmated	Rheum Palmatum.
Rhubarb, Wave-leaved	Rheum Undulatum.
Rue, Common	Ruta Graveolens.
Sabadilla	Helonias Officinalis.
Saffron, Common	Crocus Sativus.
Sage, Garden	Salvia Officinalis.
Sago	Sagus Rumphii.
Sarsaparilla Plant	Smilax Sarsaparilla.
Sassafras Tree	Laurus Sassafras.

VARIETIES.

There is no friend to a man so true, so kind, so real, and so good, as a woman.

Dean Swift says he never knew a man to rise to eminence, who lay in bed of a morning; and Dr. Franklin, in his peculiar manner, says, "he who rises late may trot all day, but never overtakes his business."

A man without money, a heart full of philanthrophy, whose coat is a little threadbare, is shunned like a thief; a man with a pocket full of money, and a heart full of villany, is often courted for his virtues!

Thoughts on Education.—Every system of teaching must be defective which has no reference to the characteristic talent of the scholar, who, though he may be a dunce in classics, and slow of recollection, may possess a turn of mind which will one day lead him to great discoveries, and rank its possessor amongst the most eminent of mankind.

The Best Monument.—Do good, and leave you a monument of virtue that the storm of time can never destroy. Write your name in kindness, love, and mercy, on the hearts of thousands you come in contact with year by year, and you will never be forgotten. No, your name, your deeds, will be as legible on the hearts you leave behind as the stars on the brow of the evening. Good deeds will shine as brightly on the earth as the stars of heaven.—Dr. Chalmers.

Infancy.—Oh, tender Infancy! the gem of life and light, that dawns in many-coloured hues —the offspring of love—youngest of Time's soft hours in blandest innocence, and taught by Hope to breathe the joys of artlessness upon a dying world! Infancy is the callow brood, nursed in down, and fed by Affection, that blushes on the virgin buds of flowers, sparkles in babies' mirrored eyes, and gushes chuckling laughter. Infancy is seen in the prismy rainbow, born in a shower of refracted beauty, and blessed in the air of purest ecstacy: it receives the first faint smile of Heaven —it is the precious gift to earth—it is but too often the first adventurer to enter the black silence of the tomb; and is, as it were, the pulse of Eternity, quivering through a sphere of mortality, fearful of sin, and winging its holy and happy spirit to another and better inheritance—to Him who saith, "Suffer little children to come unto me, and forbid them not."—J. R. Prior.

Music.—Man is made for the love and practice of music. He has got a musical instrument implanted in his own physical frame, formed strictly on musical principles. In the musical ear he has a guide or helm to this instrument, without which the voice would be worthless. This is a part of the moral and physical machinery God has given us to devote to the moral culture of our own heart. The mind is made to reason, to investigate, to know, and to deal with great truths; the heart is made to feel, to grow in sympathy and sensibility. It is the province of music to deepen, expand, and perpetuate that feeling. Intellectual greatness may be associated with deep moral debasement. In this case that greatness is ever

used to curse and oppress others. Intellectual power ever needs the guidance of moral to direct it to great and benevolent purposes. Moral power is the result of moral education, of which music is a high branch. The more knowledge we acquire, the wiser we are. The deeper we drink at the fountain of feeling, the better we are. Thus a man may be wise and not good. The qualities of wisdom and goodness are essentially different.

THE SERPENT AS AN EMBLEM.—The twisted serpent round a staff, and sometimes a retort, is the usual attribute of healing; it is on the reverse of the coin of Cos and Permagos, in honour of Esculapius, Hippocrates, and Galen, the physicians, who were honoured while living, and worshipped almost as divinities after their decease. From the creation of the world the serpent had great mystery attached to it, symbolical and allegorical, for many purposes. (See the Rev. J. B. Deane's observations on Dracentia, in the Archæologia, vol. xxv, pp. 188-223.) This emblem of healing may have derived its origin from Holy Writ. Numbers, chap. xxi, verse 8.—"And the Lord said unto Moses, make thee a fiery serpent and set it upon a pole, and and it shall come to pass that every one that is bitten, when he looketh upon it he shall live." There is a remarkable coincidence in the life of Galen, the physician of Pergamos, who cured a malady in Endermes, the philosopher, with the same medicine (theriacum) that caused it.—*Gentleman's Magazine.*

The Turveytopians have no soldiers; but they give the same amount of honour to their schoolmasters. They have a belief that it is quite as noble to build up a mind as to hack a body; that to teach meekness, content, is as a high a feat as to cut a man through the shoulder-bone; that, in a word, it is as wise and useful, and surely as seemly in the eye of watchful Heaven, to fill the human brain with thoughts of goodness, as to scatter it from a skull cleft by the sword in twain. Hence, the schoolmaster in Turveytop is a great social authority, honoured by the state. The savage counts his glories by scalps; the refined man of war by his gazettes. The general kills five thousand men—defeats some twenty thousand. He may have picked a quarrel with them, that he might pick his sprig of laurel, and rejoice in lawful plunder. He has done his work upon humanity; he has acted his part in the world—a world of human sympathies—and he becomes earl, or steps up duke. It is his rightful wage, paid by a grateful hand. The schoolmaster of Turveytop numbers his scholars; shows the heroes he has made; the victors over self among his army; the troops of wise and peaceful citizens he has marshalled for the field of life, and is honoured and rewarded accordingly.—*Jerrold's Clovernook.*

G. CALDWELL, M.R.C.S.I.,
Practitioner of Medical Botany, and Proprietor of the Botanic Dispensary,
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COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—DR. JOHNSON.

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THE GLEANER, No. 44.

ON THE SYMPTOMS OF DISEASE.

DR. WATSON observes:—"We are perpetually talking about *symptoms*, and no wonder, for symptoms are the signals by which we learn that disease is present—the evidence upon which our whole *craft* proceeds." Mark this, reader! the doctor styles the medical profession a craft, and, alas! a vast many of us have found it, what a little addition to the epithet made use of by our doctor (viz. Y), a craft-*y* lot. But to continue (and here it may be as well to observe that the object of our "Gleaner" is to cull the very essence of learned men's opinions, practice, &c., seize upon the good to present to our readers, and reject the bad and fallacious). "We are therefore always observing symptoms, analysing them, striving to interpret their meaning, to ascertain what they denote. Without a knowledge of symptoms we can have no knowledge of the art of physic. Sagacity in penetrating the import of symptoms constitutes a great part of the skill of an able medical man.

"We shall find it useful to take a cursory view of semeiology (the science of symptoms), and to familiarise our thoughts with some of the leading symptoms themselves, before we speak of them in connection with particular diseases. For my own part," states Dr. Watson, "if I were called upon to define a symptom, I should say, 'Every thing or circumstance happening in the body of a sick person, and capable of being perceived by himself or by others, which can be made to assist our judgment concerning the seat or nature of his disease, its probable course and termination, or its proper treatment, every such thing or circumstance is a symptom.'

"It is for three purposes that we cultivate the study of symptoms. *First*, To ascertain the seat and the kind of disease under which our patient is labouring: in technical language, to pronounce the *diagnosis*. I am no great friend to technical phrases when they can be avoided without inconvenience; but in some cases short terms of art save us a great deal of tiresome and needless words and explanations.

"A *second* object of the study of symptoms is to enable us to foresee and foretell the probable course and issue of disease; in other words, to frame the *prognosis*.

"And a *third* and paramount use of a knowledge of symptoms is to direct our treatment of disease." Now we come to some serious admissions of the inability of allopathic science and practice; yet the majority of medical men lay all the blame accruing from what is here stated upon the shoulders of the practitioners of Dr. COFFIN'S Medico-botanic System.

Dr. Watson goes on to state: "I suspect that the immense importance of the first-mentioned of these three objects—the *diagnosis* or *recognition* of disease—is not always clearly seen, either by students or practitioners of medicine. Sometimes WE are obliged to prescribe for a malady, although we are in great uncertainty, perhaps in total ignorance, respecting its nature or its situation. But this is always unsatisfactory. On the other hand, when we have ascertained where

and what the disease is, we apply with much more confidence, precision and comfort those rules for its relief which we have acquired by our own observation." We would ask whether this is not the practice of the Coffinites? They owe much to their observation, and apply such botanic remedies as will cure. "*Diagnosis* forms the indispensable basis of all *advances* in physic as a practical art. There is a common saying, that the knowledge of what a disease is is half its cure. In one sense this may sometimes be true, but in another sense it is not so. Almost all that we know concerning the proper treatment of the sick is *originally derived* from observation, not of the nature of diseases, but of the effects of remedies!" Read Dr. COFFIN'S "Guide to Health," which contains more information on the absolute knowledge of disease than all that has been said or written by the doctors of the old school throughout all their creeping, dark duration. Dr. COFFIN has elucidated the subject of disease most clearly, and has gone far a-head of the medical men of the allopathic school; and if any person will give his "Guide to Health" a serious perusal, and will recollect its leading doctrines upon disease, he will know more than the whole legalised fraternity can teach, or at least are willing to teach him, allowing them to know more than their practice denotes. "That rhubarb will purge, opium lull to sleep, loss of blood cause faintness, are truths which experience alone could suggest, and successive trials alone confirm. They are purely empirical truths." (So truth is acknowledged to be on the side of empiricism! So far so good; and thus the term empiric is no stigma on the botanical practitioner.) "No one could guess them beforehand. No skill in the discrimination of disease has even a tendency to teach them. When parts of the body are displaced, as in herniæ and dislocations, or when distension and pressure are evidently produced by accumulated fluids, the mechanical remedies are at once suggested by the physical and obvious faults. But with such exceptions, diagnosis does not, of itself, afford us *any* direct information as to the cure of diseases; but it does *this:* it defines and fixes the objects about which observation is to be exercised, and experience collected. When we can once identify a given diseased condition, we obtain the privilege of watching the behaviour of that diseased condition, again and again under the operation of therapeutic (curative) measures; and from that time the increase of our knowledge concerning the appropriate management of that particular disease becomes progressive and sure.

"The term experience is obviously misapplied, and the results of all observation are vitiated, when any doubt exists about the sameness of the objects contemplated. It is mainly to this imperfection in the diagnostic part of medicine that we must attribute the uncertainty and variation, both of doctrine and practice, which have brought so much suspicion, reproach and ridicule upon the science we (the medical men) profess. *False* experience, if I may use such a term, has greatly hindered the progress of the healing art; and *false experience* springs from false diagnosis. A man may tell you he has cured a score of cases of advanced phthisis, but he has deceived himself: they were not instances of true phthisis, but simple cases of chronic inflammation, with puriform discharge of the mucous membrane of the bronchia. He publishes an account of his success, and of his plan of treatment, and thus he deceives others also; and thus he retards the science which he fondly and conscientiously believes he is promoting. Accuracy of diagnosis, then, as the foundation of all true experience, and as the guide to rational treatment, cannot be too highly estimated, nor too diligently sought after. It has been wonderfully improved during the last thirty years."

HOW TO NURSE SICK CHILDREN.

(Continued from page 294.)

A NURSE'S duty towards the doctor is twofold:

1st. Strictly to carry out his directions as to the treatment of the patient.

2nd. To observe the patient's condition, to notice the changes in it, and what she may either know or suppose to be the effects of the treatment, so as to give a short, clear, and correct account to the doctor at each visit.

Both these duties must be discharged

truthfully. Directions must be carried out to the very letter of the rules given to her; or, if for some good reason any direction has not been observed, this omission must be stated, and the reason for it assigned, simply, honestly, with no concealment, no exaggeration. Any doubt as to the result of a plan which the doctor is pursuing, must be stated to him quietly, respectfully, in the absence of the patient's friends; and no doubt should be expressed, without a corresponding reason, and one more definite than the opinion that this or that has done no good, or that the child has been worse since this or that remedy was employed.

But to discharge either of these duties well, and especially the latter, the nurse must know what to observe; for the signs of disease differ, as well according to the age of the child as to the nature of the illness from which it is suffering. Cries are the only language which a young baby has to express its distress, as smiles and laughter and merry antics tell without a word its gladness. That the baby must be ill is all that its cries tell one person; another who has seen much of sick children, will gather from them more, and will be able to judge whether its suffering is in the head, chest, or stomach. The cries of a baby with stomachache are long, loud, and passionate; it sheds a profusion of tears; now stops for a moment, and then begins again, drawing up its legs to its stomach; and as the pain passes off, stretches them out again, and with many little sobs passes off into a quiet sleep. If it have inflammation of the chest, it does not cry aloud; it weeps no tears, but every few minutes, especially after drawing a deeper breath than before, or after each short, hacking cough, it gives a little cry, which it checks apparently before half finished, and this either because it has no breath to waste, or because the effort makes its breathing more painful. If disease is going on in the head, the child will utter sharp, piercing shrieks, and then between times, a low moan or wail, or, perhaps, no sound at all, but will lie quiet, apparently dozing, till pain wakes it up again. It is not, however, by the cry alone, or by any one sign of disease, that you are to judge either of its nature or its degree: but I mention this merely as an instance which any one can understand of the different meaning that even a baby's cry will convey to different persons.

When a child is taken ill, be the disease from which it is about to suffer what it may, there is at once a change from its condition when in health, such as soon attracts the attention even of the least observant. The child loses its appetite, is fretful and soon tired, and either very sleepy or very restless, while most likely it is thirsty, and its skin is hotter than natural. In many instances, too, it feels sick, or actually vomits, while its bowels are either much purged, or very much bound. If old enough to talk, it generally complains of feeling ill, or says it has pain in some part or other, though it is by no means certain that a little child has described rightly the seat of its pain, for it very often says that its head aches, or its stomach aches, just because it has heard people, when ill, complain of pain in the head or stomach. Some of these signs of illness are, of course, absent in the infant, who can describe its feelings, even by signs, imperfectly. But the baby loses its merry laugh and its cheerful look, it ceases to watch its mother's or its nurse's eye, as it was used to do, though it clings to her more closely than ever, and will not be out of her arms even for a moment and if at length rocked to sleep in her lap, will yet wake up, and cry immediately on its being placed in its cot again. Such symptoms of illness as these may continue for one or two days before the doctor is able to determine what disease the child is about to suffer from; and in this state of doubt the nurse may do much by her careful observation towards helping the doctor to come to a right decision. At the Children's Hospital it is customary, unless otherwise ordered by the doctor, to place a child, on its admission, in a warm bath. For this now there are several reasons, in addition to the very evident one of insuring the child's perfect cleanliness. The warmth of the water is grateful and soothing to its feverishness, and that is one advantage; and then another is, that, when stripped for the bath, the nurse has the opportunity of carefully examining the whole of the child's body, and thus of seeing whether there is any rash or

eruption, as it is called, upon it, while the bath, moreover, helps to throw out any rash if it were about to appear. It is not enough, however, to have looked out for this when the child was in the bath, but once in every twelve hours at least, till the nature of the disease has been ascertained, you should take the opportunity of carefully repeating this examination. With a little care you will soon learn to distinguish the different rashes. That of measles appears as a number of dark-red spots, in many places running into each other, and is usually seen first about the face, and on the forehead, near the roots of the hair, while it is usually preceded by running at the eyes and nose, and all the signs of a severe cold. The rash of scarlet fever does not appear in separate spots, but shows itself more in a general bright-red colour of the skin, not unlike that of a boiled lobster. It appears first about the neck and chest in greater degree than about the face, and is usually preceded and accompanied by sore throat. The eruption of chicken-pox is attended by fever, but not by so much running at the eyes or nose as measles, nor with the same frequent cough; while the spots are small, separate pimples which come out generally over the whole body, as well as about the head and face. They appear earlier by a few hours on the body than elsewhere, and are seen in a day or two, having much enlarged in size, to turn into little bladders of water, as big as the top of a large blanket pin or larger; this water next becomes milky in appearance, and then the bladders containing it shrivel and dry up into small, yellowish-brown scabs, which soon fall off.

ANATOMY OF THE ARTERIES.

The knowledge of the arteries bears along with it the whole anatomy of the human body. The nerves accompany the arteries; the lymphatics and veins twine round them; the glands and various organs are composed of them. The intimate structure of parts is known only by understanding the forms of their vessels; and as each individual part is nourished by arteries, he who has studied the arteries thoroughly knows the whole.

But to the surgeon the knowledge of the arterial system is valuable beyond all calculation or belief. He performs no operation in which arteries are not engaged; he cures no great wound in which arteries are not first to be tied; he enters into no consultation in which the arteries are not first spoken of. Without a knowledge of the arteries, he can neither think sensibly nor act safely.

Most unhappily all this comes to be known at that period of life when the deepest conviction can produce only fear and perplexity, sorrow and regret. Yet, strange to tell, there is no such conviction; no regret, no irresolution, no perplexity, is ever seen.

If the negligence with which anatomy is studied may stand excused on any account, it is on this only, that anatomists have been accustomed to write, not for the public, in plain and simple language, but for each other, in an unknown tongue. By this I mean not a foreign or a dead language, but a peculiar style and phrase which no one can understand unless he be initiated; unless he have studied the science itself so intensely, that he has also learned the jargon in which it is conveyed: in short, no one but a thorough anatomist can understand the language of anatomy, nor can even he understand it without some labour. Anatomists have buried their science under the rubbish of names; there is not a difficult or hard-sounding word upon which they have any claim that they have not retained: they have choked their subject with useless minutiæ; they have polluted their language, by transferring to it from Latin many words which, by their continual inflections, in that language were beautiful; while their unvaried, uncouth termination in ours, is barbarous in the utterance, while it tends but to interrupt and puzzle the sense.

An anatomist, for example, will describe an artery as "going to the radial edge of the second metacarpal bone; then supplying the abductor and flexor muscles; then going along the bone of the first phalanx, seated upon this second metacarpal bone;" with many other distortions, ambiguities, and little contrivances, to conceal (as one would believe) that he is describing so simple a matter as the artery of the fore-finger; which the reader at

last finds out either by some lucky chance, or by reflecting how many metacarpal bones there are; and then reckoning them first forwards and then backwards, that he may be sure which it is that the author means; for his author may count from the little finger towards the thumb, or from the thumb towards the little finger; or he may have a fancy of leaving out the thumb, and reckoning only four. What must be the surprise of any well-educated young man when he reads in those books which he must study, of the regions of the elbow or thumb or fore-finger! And if an anatomist understands such things with difficulty, how distressing must they be to the student!

This is the scholastic jargon which has so long been the pride of anatomists and the disgrace of their science; which has given young men a dislike for the most useful of all their studies; and which it is now full time to banish from our schools. These are the authors who avoid plainness as if it were meanness; who are studious of hard words as if they constituted the perfection of science: "it is their trade, it is their mystery, to write obscurely;" and full sorely does the student feel it.

Want of arrangement, again, has still worse effects. Confusion is a monster in science.

If I should tell my reader that there are very nearly one thousand arteries in the body, going promiscuously to bones, ligaments, bowels and glands, muscles, and nerves, to a thousand unconnected difficult parts, all of which he must know by name, how would he be affected! But when I observe, that these go to the neck, the head, the arm, the leg, he begins to see this confusion of muscles, and glands, and bowels, vanish, and to perceive that all these arteries may be usefully and very simply arranged. When he is next taught to know the course of each greater artery, and the parts in which each division and branch of it lies, he perceives clearly that the parts through which it runs, as the armpit, neck, or groin, must limit and regulate the number of its branches, and give to each twig even an appropriate place and name: when, next, the whole arterial system is marked and chalked out for him in different portions; when there are points of peculiar importance set apart which he is charged to learn with particular care—he sees a good end in all this toil; he begins with courage, and gets forward easily; it becomes an interesting, and of course a pleasing task; but still it is a task: and I entreat the young student, as he values his own honour, or the safety of his friends, not to bate himself one iota of the whole. Let him not take an indolent advantage of those arrangements which are meant to promote his industry, not to prevent it. Let him not read only concerning the greater arteries, neglecting the smaller ones, but go through the whole piece of anatomy honestly and fairly. He will, no doubt, forget in time the smaller arteries; but by having studied even them with diligence, he must remember the great and important arteries with a clearness of comprehension and arrangement, which those who have not gone thus honestly through the whole study can never attain. Let him also remember that studies like these, well performed during his early years, do, like past dangers, or the remembrance of good deeds, give an ease and pleasure to his after-life.

The arteries, I will now venture to say, should be with the surgeon as familiar as his name; and there is no argument which proves it more strongly than this, that a man of real learning, of sterling good sense, of a clear head and steady hand, a man accomplished in all other respects, and fitted by nature and genius for performing the most difficult operations, if yet he want this part of knowledge, may, in one unhappy moment, do things which he must think of with horror during all his life. I know well how such little accidents are thought of, when at last the evil day comes. A surgeon hardly believes this strict knowledge of the arteries to be so great a point. In the midst of an operation, or in a common wound, it gives him no concern to see arteries bleed which he did not look for; nor has he great reluctance to drive his needle among parts which he does not know. An artery bleeds, and he looks for it; he calls out at last to screw the tourniquet, and it stops; the tourniquet is loosened again, and again it bleeds; again the screw is tightened on account of the

loss of blood; he expects to strike the artery; he is accustomed to strike it, not by knowing where it lies, but by seeing it bleed: at last some lucky dab of the needle succeeds, or perhaps from faintness of the patient the bleeding ceases: the surgeon is relieved from his present anxiety; but in a few hours he is called back to this scene of confusion and dismay; yet at last the bleeding is somehow or other mastered; and thus he gets on through all his difficulties, accident after accident, operation after operation, till at last he almost forgets that anatomy was a branch of his education, or the knowledge of blood-vessels necessary in operations or wounds.

I will not say that a man cannot suppress a bleeding from a wound in the arm, because he is not acquainted with the anatomy of the arm; but this surely I may be allowed to say, that it is a piece of knowledge which at all times, but especially in those circumstances, can do no harm; and that if you leave a patient to choose betwixt two surgeons, one skilled in the knowledge of arteries, another knowing them only by seeing them spout out blood, it is easy to foretel where his choice will fall.

Perhaps some will be so hardened as to to say, "and yet we seldom hear that patients die of bleeding." Is it then a merit that your patient is not plainly killed; that he does not expire under your hands? Is it nothing to lose blood from day to day? Is it nothing that your patient is reduced to extreme weakness, suffering every thing but actual death? Is it nothing that he lies with tourniquets round the limbs in fear and anxiety, attended by young surgeons appointed to watch that bleeding, which may burst out while the patient turns in bed, and destroy him in one moment? Is it nothing to have fresh incisions and new searchings for the artery to endure? These are real difficulties and dangers, and they should be provided for; our honour as well as our duty requires it. Bleeding from a great artery is to the patient the greatest danger; the very report of an ill accident is to the surgeon (though God knows he may be blameless) the greatest disgrace; and, lastly, though it should not be so, his taking up a bleeding artery dexterously and quickly, when others have failed, is a great honour.

When we think of all the important consequences of being thoroughly versed in this part of anatomy, they crowd upon our imagination more in number than can be even named. The surgeon may, indeed, provide for the arteries to be cut in a regular operation, by consulting books; but when he is called to a patient bleeding and faint, perhaps expiring, that person must live or die by his immediate skill! By his skill he will obtain the good opinion, not of ignorant attendants only, but of the profession: and by a bold and sensible conduct in any difficult situation he may give him a lesson of real use. Let us but for a moment think of the chances of those wounded in war; the alarming unthought-of accidents which overtake us daily in private life; the wounds and hurts which workmen receive; let us reflect on all the kinds of aneurism both in the heart and arteries, from wounds, from blows, from inward diseases; let ns think of all the various operations in which arteries are concerned—and then declare whether, of all his studies, the young man should not value that most which makes him so immediately and eminently useful.

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

THROUGH many of our agents having curtailed their orders for our Journal, the publisher has been obliged to reduce the allowance of the editor; consequently the plates will not be coloured till an increase of patronage shall warrant such additional expense. Yet, as the editor is desirous of furthering the cause of the Journal by every means in his power, he here gives plain directions for colouring the different herbs, so simple in their application that a child may colour them.

First, as to colours: Procure gamboge, one penny; Prussian blue, one penny; crimson lake, one penny.

These are the three primitive colours, by which any tint can be made. Thus

Gamboge and Prussian blue will make every tint of *green*, according to the quantity of each colour used.

Prussian blue and lake will make every

AVENS

tint of *purple*, and gamboge and lake every tint of *orange*.

These, with burnt umber, one penny, for roots, &c., and two camel-hair pencils at one penny each, will be all the requisite materials, which will, at least, colour one hundred and fifty plants. The true colours of each is and will be given in the articles on Pictorial Illustrations of Medical Botany.

AVENS (GEUM URBANUM).

DESCRIPTION.—A hardy, perennial plant, frequent in woods, hedges, and dry, shady places; growing to the height of one or two feet, and bearing a yellow flower from June to August.

QUALITIES.—Avens is a mild astringent, and slightly aromatic. It is a good stomachic. The root roasted makes a good coffee, and in its raw state is frequently put into ale to prevent its turning sour.

To colour this plant.—The flower is coloured with gamboge, and the little leaves between the petals with a green, composed of gamboge and a quarter of the quantity of Prussian blue. The whole plant should likewise be washed over with this, and the shadows made a little darker with Prussian blue. Also paint a thin line of light lake down the light side of the stalk. The root should be coloured with burnt umber, made thinnish with water.

FORMATION AND GROWTH OF BONES.

As dead parts, the bones are the most permanent, unchangeable parts of all the body; while as living parts, and partaking in the laws of the living system, their substance changes continually. We see them exposed to the seasons, without suffering the smallest change; remaining for ages the memorials of the dead; the evidence of a former race of men, or of animals which have ceased to exist since the last great revolution of our globe; the proofs of such changes on our globe as we cannot trace but by these uncertain marks. It is from such circumstances that we are apt to conceive, that even in the living body, bones are hardly organised, scarcely partaking of life, not liable, like the soft parts, to disease and death. But minute anatomy, the most pleasing part of our science, unfolds and explains to us the internal structure of the bones; shows their myriads of vessels, and proves them to be as full of blood as the most succulent and fleshy parts, and as subject to change; having, like them, their periods of growth and decay; that they are more liable to accidents, and as subject to internal disease.

The phenomena of fractured bones first suggested some indistinct notions of the way in which bone might be formed. It was observed, that in very aged men, a hard crust was often formed upon the surface of the bones; that the fluid exuding into the joints of gouty people, sometimes coagulated into a chalky mass. Le Dran had thought that he had seen in a case of scrofulous bone an exudation which flowed out like wax, and hardened into perfect bone; Daventer that he had seen the juice exuding from a split in a bone, coagulate into a bony crust; and they thought it particularly well ascertained, that callus was but a coagulable juice, which might be seen exuding directly from the broken ends, and which gradually coagulated into hard bone. The best physiologists did not scruple to believe, that bones, and the callus of broken bones, were formed of a bony juice, which was deposited by the vessels of the part, and which passing through all the successive conditions of a thin uncoagulated juice, of a transparent cartilage, and of soft and flexible bone, became at last, by a slow coagulation, a firm, hard and perfect bone, depending but little upon vessels or membranes, either for its generation or growth, or for nourishment in its perfect state. This opinion, erroneous as we now know it to be, once prevailed; and if other theories were at that time proposed, they did not vary in any very essential point from this first notion. De Heide, a surgeon of Amsterdam, believed that bone or callus was not formed from a coagulable juice, but from the blood itself. He broke the bones of animals, and, examining them at various points of time, he never failed (like other speculators) to find exactly what he desired to find. "In every experiment," he found a great effusion of blood among the muscles, and round the broken bone; and he as easily traced this blood through all the stages of its progress.

In the first day red and fluid; by and by coagulated; then gradually becoming white, then cartilaginous, and at last (by the exhalation of its thinner parts) hardening into perfect bone.

It is very singular, that those who abjure theory, and appeal to experiments, who profess only to deliver facts, are least of all to be trusted; for it is theory which brings them to try experiments, and then the form and order, and even the result, of such experiments, must bend to meet the theories which they were designed to prove: it is by this deception that the authors of two rival doctrines arrive at opposite conclusions, by facts directly opposed to each other. Du Hamel believed, that as the bark formed the wood of a tree, adding, by a sort of secretion, successive layers to its growth, the periosteum formed the bone at the first, renewed it when spoiled or cut away, and when broken, assumed the nature of bone, and repaired the breach. He broke the bones of pigeons, and, allowing them to heal, he found the periosteum to be the chief organ for reproducing bone. He found that the callus had no adhesion to the broken bone, was easily separated from the broken ends which remained rough and bare; and, in pursuing these dissections, he found the periosteum fairly glued to the external surface of the new bone; or he found rather the callus or regenerated bone to be but a mere thickening of the periosteum, its layers being separated, and its substance swelled. On the first days he found the periosteum thickened, inflamed, and easily divided into many lamellæ, or plates; but while the periosteum was suffering these changes, the bone was in no degree changed. On the following days, he found the tumour of the periosteum increased at the place of the fracture, and extending further along the bone; its internal surface already cartilaginous, and always tinged with a little blood, which came to it through the vessels of the marrow. He found the tumour of the periosteum spongy, and divisible into regular layers, while still the ends of the bone were unchanged, or only a little roughened by the first layer of the periosteum being already converted into earth, and deposited upon the surface of the bone: and in the next stage of its progress, he found the periosteum firmly attached to the surface of the callous mass. By wounding, not breaking, the bones, he had a more flattering appearance still of a proof; for having pierced them with holes, he found the holes filled up with a substance, proceeding from the periosteum, which was thickened all round them. In an early stage, this plug could, by drawing the periosteum, be pulled out from its hole: in a more advanced stage, it was inseparably united to the bone so as to supply the loss.

Haller, doubting whether the periosteum, a thin and delicate membrane, could form so large a mass of bone or callus, repeated the proofs, and he again found quite the reverse of all this: that the callus or the original bone was in no degree dependant on the periosteum, but was generated from the internal vessels of the bone itself: that the periosteum did indeed appear as early as the cartilage which is to produce the bone, seeming to bound the cartilage, and give it form; but that the periosteum was at first but a loose tissue of cellular substance, without the appearance of vessels, or any mark of blood, adhering chiefly to the heads or processes, while it hardly touched the body of the bone. He also found that the bone grew, became vascular, had a free circulation of red blood, and that then only the vessels of the periosteum began to carry red blood, or to adhere to the bone. We know that the bones begin to form in small nuclei, in the very centre of their cartilage, or in the very centre of the yet flexible callus far from the surface, where they might be assisted by the periosteum; and here it is justice to add, that while these questions were agitated on the continent, Dr. William Hunter had proved that the callus of broken bones was organised, and that the secretion of bone into it proceeded from the arteries taking on them a new action, and secreting the earthy matter into the first-formed substance.

Thus has the formation of bone been falsely attributed to a gelatinous effusion, gradually hardened; or to that blood which must be poured out from the ruptured vessels round the fractured bone; or to the induration and change of the

periosteum, depositing layer after layer, till it completed the form of a bone.

But when, neglecting theory, we set ourselves to examine, with an unbiassed judgment, the process of nature in forming the bones, as in the chick, or in restoring them, as in broken limbs, a succession of phenomena present themselves, the most orderly, beautiful, and simple of any that are recorded in the philosophy of the animal body: for if bones were but condensed gluten, coagulated blood, or a mere deposition from the periosteum, they were then inorganised, and out of the system, not subject to change, nor open to disease; liable, indeed, to be broken, but without any means of being healed again; while they are, in truth, as fully organised, as permeable to the blood, as easily hurt, and as easily healed, as sensible to pain, and as regularly changed as the softer parts are. We are not to refer the generation and growth of bone to any one part. It is not formed by that jelly in which the bone is laid, nor by the blood which is circulating in it, nor by the periosteum which covers it, nor by the medullary membrane with which it is lined; but the whole system of the bone, of which these are parts only, is designed and planned, is laid out in the very elements of the body, and goes on to ripeness, by the concurring action of all its parts. The arteries, veins, and lymphatics, exist in the cartilage or the membranes, before bone is formed. At a certain regular period, the arteries, by a determined action, deposit the bone; which is formed commonly in a bed of cartilage, as the bones of the leg or arm are; sometimes betwixt two layers of membrane, like the bones of the skull, where true cartilage is never seen.

My readers understand that cartilage is a substitute for bone in the early months of the fœtus; that at a regulated period in each bone, at a given point, and in a perfectly regular manner, portions of the cartilage are absorbed, and bone deposited.

This cartilage never is hardened into bone; but, from the first, it is in itself an organised mass. It has its vessels, which are at first transparent, but which soon dilate; and whenever the red colour of the blood begins to appear in them, ossification very quickly follows. The first mark of ossification is an artery, which is seen running into the centre of the cartilage, in which the bone is to be formed. Other arteries soon appear, overtake the first, mix with it, and form a network of vessels; then a centre of ossification begins, stretching its rays according to the length of the bone, and then the cartilage begins to grow opaque, yellow, brittle; it will no longer bend, and the small nucleus of ossification is felt in the centre of the bone, and when touched with a sharp point, is easily known by its gritty feel. Other points of ossification are successively formed; always the ossification is foretold by the spreading of the artery, and by the arrival of red blood. Every point of ossification has its little arteries, and each ossifying nucleus has so little dependence on the cartilage in which it is formed, that it is held to it by vessels only; and when the ossifying cartilage is cut into thin slices, and steeped in water till its arteries rot, the nucleus of ossification drops spontaneously from the cartilage, leaving the cartilage like a ring, with a smooth and regular hole where the bone lay. This is because the cartilage was a substitute for the bone, and, because preparatory to the formation of the nucleus of bone, the cartilage is absorbed, and a bed prepared for the new formation.

The colour of each part of a bone is proportioned exactly to the degree in which its ossification is advanced. When ossification begins in the centre of the bone, redness also appears, indicating the presence of those vessels by which the bony matter is to be poured out. When the bony matter begins to accumulate, the red colour of those arteries is obscured, the centre of the bone becomes yellow or white, and the colour removes towards the ends of the bone. In the centre, the first colouring of the bone is a cloudy, diffused, and general red, because the vessels are profuse. Beyond that, at the edges of the first circle, the vessels are more scattered and asunder, distinct trunks are easily seen, forming a circle of radiated arteries, which point towards the heads of the bone. Beyond that, again, the cartilage is transparent and pure, as yet untouched with blood; the arteries have

not reached it, and its ossification is not begun. Thus, a long bone, while forming, seems to be divided into seven various-coloured zones. The central point of most perfect ossification is yellow and opaque. On either side of that, there is a zone of red. On either side of that, again, the vessels being more sparingly distributed, form a vascular zone, and the zone at either end is transparent cartilage. The ossification follows the vessels, and buries and hides those vessels by which it is formed: the yellow and opaque part expands and spreads along the bone: the vessels advance towards the heads of the bones: the whole body of the bone becomes opaque, and there is left only a small vascular circle at either end; the heads are separated from the body of the bone by a thin cartilage, and the vessels of the centre, extending still towards the extremities of the bone, perforate that cartilage, pass into the head of the bone, and then its ossification also begins, and a small nucleus of ossification is formed in its centre. Thus the heads and the body are, at the first, distinct bones formed apart, joined by a cartilage, and not united till the age of fifteen or twenty years.

Now we know the difference of apophysis, and epiphysis, for anatomists make a sort of juggle betwixt these names, as if they were engaged in important matters. The apophysis is a process, or projection of bone. The epiphysis is the distinct portion of the bone, which is formed in a distinct nucleus of bone, and becomes afterwards joined and incorporated with the main body of the bone, and may then be described as an apophysis.

It is more important a great deal to observe, that as the extremities of the long bones forming the articulations are joined to the bodies or shafts by cartilage in childhood and adolescence, they are subject to be torn off, and to present a very puzzling case, that is, a fracture without crepitus; for as the crepitus of the fractured bone arises from the irregularity of the broken ends, and as in this sort of fracture (or diastasis) the surfaces are smooth, the surgeon is liable to be deceived, and the patient to permanent lameness and distortion.

The vessels may be seen entering in one large trunk (the nutritious artery) into the middle of the bone. From that centre they extend towards either end, and the fibres of the bone extend in the same direction; there are furrows betwixt the rays, and the arteries run along in the furrows of the bone, as if the arteries were forming these ridges, secreting and pouring out the bony matter, each artery piling it up on either side to form its ridge; yet the arteries of a bone branch with freedom, and with the same seeming irregularity as in other parts of the body. The arteries do not exude their secretion from their sides, so as to pile up the ridge of bone in their course. The secretion is performed in their very extremities. The body of the bone is supplied by its own vessels; the heads of the bone are in part supplied by the extremities of the same trunks which perforate the dividing cartilage like a sieve: the periosteum adhering more firmly to the heads of the bone, brings assistant arteries from without, which meet the internal trunks, and assist the ossification; which, with every help, is not accomplished in many years.

It is by the action of the vessels that all the parts of the human body are formed, fluids and solids, each for its respective use: the blood is formed by the action of the vessels, and all the fluids are in their turn formed from the blood. We see in the chick, where there is no external source from which its red blood can be derived, that red blood is formed within its own system. Every animal system, as it grows, assimilates its food, and converts it to the animal nature, and so increases the quantity of its red blood: and as the red blood is thus prepared by the actions of the greater system, the actions of particular vessels prepare various parts: some to be added to the mass of solids, for the natural growth; others to supply the continual waste, or to allow new matter to be received; others to be discharged from the body as effete and hurtful, as the secretions into the intestines, and from the kidney and from the skin; others again to perform certain offices within the body, as saliva, bile, or pancreatic fluid. Thus the body is furnished with various apparatus for performing various offices, and for reparing the waste. These

are the secretions, and the formation of bone is one of these. The plan of the whole body lies in the embryo, in perfect order, with all its forms and parts. Cartilage is laid in the place of bone, and preserves its form for the future bone, with all its apparatus of surrounding membranes, its heads, its processes, and its connection with the soft parts. The colourless arteries of this pellucid but organised mass of cartilage keep it in growth, extend, and yet preserve its form, and gradually enlarging in their own diameter, at last receive the entire blood. Then the deposition of earthy matter begins. The bone is deposited in specks, which spread and meet and form themselves into perfect bone. While the bone is laid by arteries, the cartilage is conveyed away by the absorbing vessels; and while they convey away the superfluous cartilage, they model the bone into its due form, shape out its cavities, cancelli, and holes, remove the thinner parts of the cartilage, and harden it into due consistence.

If the organisation of arteries and veins, arteries to deposit bone, and absorbents to take up the cartilage, and make room for the osseous matter, be necessary in the formation and growth, it is no less necessary for the life and health of the full-formed bone. Its natural condition depends on the regular deposition and reabsorption, moulding and forming the parts; and by various degrees of action, bone is liable to inflame, ulcerate, and spoil, to become brittle by too much secreted earth, or to become soft by a deficient secretion, or by a greedy, diseased absorption of its earthy parts. The cartilage is in itself a secretion, to which the full secretion of bone succeeds.

In the reunion of a fractured bone, we have to observe nearly the same phenomena which accompany its first formation.

The first effect is, the tearing of the periosteum and surrounding cellular textures, and perhaps some part of the muscular substance. The consequence of which is, that the broken extremities are surrounded with coagulum of blood. The extravasated blood being absorbed, an effusion is poured out by the vessels of the broken bone. This matter is a regular secretion: it appears to the eye like an uniform jelly; but so does the embryo itself. It is bone in embryo, the membranes and vessels, arteries, veins, and absorbents are in it; the arteries of the surrounding parts do not shoot into it, but veins, as well as arteries and absorbents, inosculate with the vessels of this new-formed matter; and whatever vessels may, by accidental contact, inosculate with this substance, whether coming from bone, muscles, or membrane, still bone is formed, because it is the destined constitution of the new-formed mass, or rather of the vessels which are already in it to form bone.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

VARIETIES.

UNITY IS STRENGTH.—When dogs attack a flock of sheep, the sheep scatter, and thus become an easy prey ; but in attacking goats they find it more difficult to accomplish their purpose. The goats form into a ring, the kids in the centre, and the horns of the old bucks, presented against the enemy, are a strong defence.

THE TOBACCO PLANT.—It was at one time extensively cultivated in the North Riding of Yorkshire, but in the early part of the reign of George III penalties were inflicted on the growers, to the amount of £30,000, and the tobacco publicly burned. In Scotland it was also grown when our colonial trade was interrupted by the American war. About Kelso and Jedburgh a considerable tract of land was devoted to this purpose, the Act of Charles II, which made the growth illegal in England, of course not affecting Scotland ; to meet which emergency the Act of the 19th of George III was passed, which prohibits the cultivation of more than will occupy half a rood of ground ; and which is to be used for medicinal purposes, or the destruction of insects. In Ireland it was successfully grown, particularly in the county of Wexford, some years after the restrictive law just named was passed for England, and which, curiously enough, repealed the similar laws for Ireland.—*Fairholt's History of Tobacco.*

OF THE CHEMICAL DECOMPOSITION OF ORGANISED BEINGS.—It is a striking fact that man, the most perfect creature that inhabits the earth, should be dependant upon other animals for his support and healthy existence ; and that the inferior animals in their turn should be subordinate to and entirely dependant upon plants for the continuance of their lives, and for the ability to perform any of their animal functions. Thus vegetables, which have been placed in the great scale of being, as a link, if we may so express ourselves, between the animal and mineral kingdoms, draw from the great storehouse of the earth various substances which they combine and re-combine, until they have rendered them suitable for the aliment and sustenance of the various tribes of animated beings ; and these again concoct and assimilate them by a variety of unknown processes, until they become fit for the use and maintenance of man. But it is a still more astonishing fact, that the Almighty should have so constituted the world, that the various elements which the several organised beings both animal and vegetable had converted into the pabulum of life, together with all the materials of which they themselves are constituted, should in due time be restored without loss or deterioration to the general mass of matter, ready to be again converted by the chemical processes of Nature into fit and proper nutriment for succeeding orders of animated existences.

G. CALDWELL, M.R.C.S.I.,
Practitioner of Medical Botany, and Proprietor of the Botanic Dispensary,
34, WORCESTER STREET,
BIRMINGHAM.

Mr. CALDWELL may be consulted daily, from 10 to 12 in the morning ; from 2 to 4, and from 6 to 8 in the evening (Sundays excepted).

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COFFIN'S
BOTANICAL JOURNAL
AND
MEDICAL REFORMER.

"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 45.

ON THE SYMPTOMS OF DISEASE.

The *prognosis*, or foreknowledge of the course and event of diseases, has but little connection with the promotion of the art of healing; but it is not on that account unworthy of our attention. Both physician and patient find their advantage in the capability of the former to determine whether a disease be remediable—to foresee the changes that may be expected in its progress—to predict the manner in which it will terminate. Knowledge of this kind opens to us a fair and honourable source of credit and reputation; and it begets a degree of confidence towards us, which is beneficial, not merely to ourselves, but to our patients. Our influence over a sick person, and the efficacy of many of our remedial measures, are remarkably increased by our evident acquaintance with the nature of the complaint, and by the reliance which is placed on our skill and judgment. It is often of material consequence, in another point of view, that the fatal character of a disease should be plainly perceived. A sick man, made aware of his danger, is furnished with a motive and an opportunity for arranging his worldly affairs, in the settlement of which the future comfort and happiness of his family may be very deeply concerned; for making his will; and for solemn preparation for that awful change that awaits him. For these reasons, medical men have in all periods endeavoured to read, in the phenomena presented to them by diseases, the event to which those diseases severally tend. To *form* an accurate opinion on this head is, however, one thing—to *divulge* it another. There is always some hazard of losing, instead of gaining credit, by strong statements and confident predictions of the death or recovery of a patient. If you give an unfavourable prognosis, you incur the risk of losing your patient altogether. His friends argue, very naturally, that you are not infallible, that you may be wrong, that if *you* know of no means of safety for him, some other practitioner may, and they *will* grasp at whatever straw comes near them. Do not suppose this is merely a selfish view of the matter. It is often of much moment to the patient himself that he should not be tempted to put his life under the charge of impostors, who will feed his hopes and promise largely, and torture him perhaps with their discipline, and have no mercy on his pocket. "Many an instance," says Dr. Watson, "have I known of persons dying of consumption, who, when given over by their regular attendants, have been brought to London at considerable expense, exchanging the many comforts of home for the inconveniences of a hired lodging, that they might be *cured* by that ignorant, cruel, and rapacious quack, Mr. St. John Long." There are other reasons, too, why we must sometimes conceal the truth from our patients. It often happens that a person is extremely ill and in great danger, but may yet recover if he be not informed of his peril. To agitate a person in this state, by telling him he is likely to die, is to lessen, perhaps to destroy, his *chance* of recovery. You kill him if you take away the hope of living. It must be confessed that the duty of the physician in these cases is very painful and embarrassing.

The patient and his friends are urgently inquisitive to know whether there is any danger, or whether he is not yet out of danger. The rule which I have always adopted, in circumstances of this perplexing kind, when I see clearly that the case is hopeless of cure, is to fix, as well as I can, upon that person, among the family or friends of the patient, to whose prudence the real state of the matter may be the more safely confided. If I think there is a possible chance of recovery, and that the patient's knowledge of his danger would diminish that chance, of course I urge the necessity of speaking to *him* with assumed cheerfulness and confidence. If I see the case is absolutely and inevitably mortal, either soon or at some little distance of time, I leave it to the discretion of the person with whom I communicate to disclose or conceal my opinion as he or she may think best. There are, I believe, practitioners who make it a point, on principles of worldly policy, *never* to speak despairingly of a patient; but I cannot regard such a rule of conduct as honest, or justifiable, or consistent with one's duty.

Now I would have you observe that symptoms do not equally or indifferently indicate the three several purposes which I have been detailing. The same symptom or set of symptoms may indeed at once reveal the nature of the disease, and foreshow its result, and point to its treatment. When we have discovered what the disease is, we want no further information to tell us how it will terminate or how we are to prescribe for it. A man previously sound and well shivers, then becomes hot, and afterwards sweats, and then reverts to his natural state of comfort and health; and the same series of phenomena recurs every other day. We pronounce the disease to be ague; we predict that, in this climate at least, the patient will recover; and we give him medicine; all upon the same set of symptoms. But this is not necessarily the case. Certain symptoms may disclose to us what the malady is, and where it is situated; other symptoms teach us whether our patient is likely to survive or not; and a still different set instruct us what is the proper method of cure to be attempted. We see a number of little pustules scattered over the skin, and we know our patient is labouring under smallpox. His chance of recovery will be singularly different, according as the spots upon his face run together, or remain separate and distinct from each other, and we investigate the state of his pulse, his breathing, his bowels and his brain, before we may venture to prescribe for him. Those symptoms or combination of symptoms, which declare the place and nature of the disease, we call *signs of disease;* those which teach us what to do, we call *indications of treatment;* we speak also of prognostic *signs.* By keeping these distinct ends of the study of symptoms in mind, we shall be enabled to group them to advantage, and to avoid huddling confusedly together symptoms that speak, not indeed a different language, but upon a different topic. The ancients, who knew but little of the intimate nature of diseases, but who paid great attention to symptoms, have laid down most admirable rules in respect of prognosis, which shows not only that the prognostic signs are more easily made out, in many cases, than the diagnostic, but also that they may be independent of them.

DICKSONIANA:

A SERIES OF ARTICLES FROM DR. DICKSON'S WORKS.

In giving these articles to our readers, we avail ourselves of the sound common sense of our author, and have no doubt that those of our readers who are unacquainted with our system, or we should say, Dr. Coffin's Medico-botanic System of Medicine, will not only see the soundness of Dr. Dickson's views, but will, by a study of the principles and practice of medicine laid down in our Journal from time to time, or by a diligent perusal and thoughtful study of Dr. Coffin's "Guide to Health," also see how beautifully they agree, in principle, together. We, Dr. Coffin's followers, of course ignore the allopathic poisons of Dr. Dickson, because our herbal remedies are equally, if not more efficacious than his minerals; the administration of our herbaceous remedies not being attended with the direful effects resulting from the administration of mineral poisons. Dr.

Dickson commences by asking, Has MEDICINE kept pace with the other arts of life? has it fallen short, or excelled them in the rivalry of improvement? Satisfactorily to solve this question, we must look a little deeper than the surface, "for TRUTH," as the ancients said, "lies in a WELL," meaning thereby that few people are deep-sighted enough to find it out. In the case of medicine, we must neither be mystified by the boasting assertions of disingenuous teachers, nor suffer ourselves to be misled by the medical press, the conductors of which, for the most part, are the mere hirelings of party, their principal business being to crush and cry down such truths or discoveries as may chance to militate against the interests of the schools and *cliques* they are employed to serve. The late Sir William Knighton was at the head of his profession; he was, moreover, physician to George IV, joining as he did much worldly wisdom and sagacity to a competent knowledge of the medical science of his age; his opinion of the state of our art in these days may be worth knowing, more especially as it was given in private, and at a time when he had ceased to be pecuniarily interested in its practice. In a letter to a friend, published after his death, he thus delivers himself:—"It is somewhat strange that, though in many arts and sciences improvement has advanced in a step of regular progression from the first, in others, it has kept no pace with time, and we look back to ancient excellence with wonder not unmixed with awe. Medicine seems to be one of those ill-fated arts whose improvement bears no proportion to its antiquity. This is lamentably true, although anatomy has been better illustrated, the materia medica enlarged, and chemistry better understood." Dr. James Gregory, a man accomplished in all the science and literature of his time, was for many years the leading physician of Edinburgh, but nevertheless held his profession in contempt. On visiting London, he had an opportunity of being introduced to his equally celebrated countryman Baillie. Curious to know Gregory's opinion of the man who then swayed the medical sceptre of the metropolis, his friends asked him what he thought of Baillie. "Baillie," he replied, "knows nothing but physic;" in revenge for which, Baillie afterwards wittily rejoined, "Gregory knows everything but physic." But what was Dr. Baillie's own opinion of his art after all? I do not allude to his language during the many years he was in full practice, when, doubtless, with the multitude who thronged his door, he really believed he knew a great deal; but what did he say when he retired from his profession, and settled at his country seat in Gloucestershire? *Then*, without the slightest hesitation, he declared that he had no faith in physic whatever! But you must not, from this, imagine that the fortunate doctor intended to say that the world had all along been dreaming, when it believed that opium could produce sleep; mercury, salivate; and rhubarb, purge. No such thing: he only confessed that he knew nothing of the manner of action of these substances on the body, nor the principle upon which they should be used. Now what would you think of a sailor, who had expressed himself in the same way, in regard to the rudder and compass, who had told you he had no faith in either instrument as a guide to steer a vessel by? Why, certainly, that he knew nothing of the profession by which he gained his living. And such really was Dr. Baillie's case. The great bulk of mankind measure the professional abilities of individuals solely by their degree of reputation, forgetting Shakespeare's remark, that a name is very often got without merit, and lost without a fault. That Baillie actually attained to the eminence he did, without any great desert of his, what better proof than his own declaration? a declaration that fully bears out what Johnson tells us in his life of Akenside, "a physician, in a great city, seems to be the mere plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence—they that reject him know not his deficiency." But still, some of you may very naturally ask, how could Dr. Baillie, in such a state of blissful ignorance or uncertainty, contrive to preserve, for so long a period, his high position with the professional public? This I take to be the true answer; the medical art, like every other art, must

have its infancy, a period when, knowing nothing, its professors may fairly be excused for believing anything. When Baillie began practice, the profession were slowly and timidly groping their way in the gloom; a few practical points they of course knew, but of the true principles of the application of those points, they were, as I shall afterwards show you, entirely ignorant. Most of them were, therefore, very ready to follow any one of their own number who should most lustily cry, I HAVE FOUND IT. In the dark we mistake a pigmy for a giant, the more especially if he talks grandiloquently. That was what Dr. Baillie did. At the commencement of his career, few medical men opened the bodies of their dead patients, for Sydenham, the English Hippocrates, had long before ridiculed the practice; which was, therefore, all but in disuse and all but forgotten, when Dr. Baillie published his book on morbid anatomy —a book wherein, with a praiseworthy minuteness and assiduity, he detailed a great many of the curious appearances so usually found in the dissection of dead bodies. Had he stopped here, Dr. Baillie would have done medicine some little service; but by doing more he accomplished less—more for himself, less for the public—for by further teaching that the only way to learn the cure of the living is to dissect the bodies of the dead, he put the profession upon a wrong path—one from which it will be long before the *unthinking majority* can in all likelihood be easily reclaimed. In the earlier part of his career, Dr. Baillie, it is only fair to suppose, believed what he wrote, though by his after-declaration he *admitted* himself *wrong*. His arguments, nevertheless, succeeded but too well with the profession, proving the truth of Savage Landor's observation, that "in the intellectual as in the physical, men grasp you firmly and tenaciously by the hand, keeping close at your side, step by step, while you lead them into darkness, but when you lead them into sudden light, they start and quit you." To impose upon the world is to secure your fortune; to tell it a *truth* it did not know before, is to make *your ruin* equally *sure*. How was the exposition of the circulation of the blood first received? HARVEY, its discoverer, was persecuted through life. His enemies, in derision, styled him the *Circulator*—a word, in its original Latin, signifying vagabond or quack; and their efforts to destroy him were so far successful that he lost the greater part of his practice through their united machinations. "Morbi non eloquentiâ sed remediis curantur," is an observation some of you may have met with in Celsus, which I will translate—Diseases are cured by remedies, not by wrangling. Yet, strange to say, the generality of great professors who have successively obtained the public ear since the time of the Roman physician have been almost all as remarkable for their love of disputation, as they have been inveterate against everything savouring of innovation in the shape of remedies. When a limb is amputated, to prevent the patient from bleeding to death, you tie the arteries. Before the time of Francis the First, surgeons followed another fashion: they stanched the blood by the application of boiling pitch to the surface of the stump. Ambrose Paré, principal surgeon to that king, introduced the *ligature* as a substitute: he first tied the arteries. Mark the reward of Ambrose Paré! He was hooted and howled down by the Faculty of Physic, who ridiculed the idea of hanging human life upon a thread, when boiling pitch had stood the test of centuries. In vain he pleaded the agony of the old application, in vain he showed the success of the ligature. Corporations, colleges, coteries of whatsoever kind, seldom forgive merit in an adversary: they continued to persecute him with the most remorseless rancour; but Paré had a spirit to despise, and a master to protect him against, all the efforts of their malice. To the Jesuits of Peru Protestant England owes the invaluable bark. How did Protestant England first receive this gift of the Jesuits? Being a Popish remedy, they at once rejected the drug as the invention of the father of all Papists—the devil. For the same reason, possibly, the physicians of Frederick the Great dissuaded him from trying it to cure his ague: luckily for the king, he laughed at their advice, took bark, and got well. In 1693, Dr. Groenvelt discovered the curative power of cantharides in dropsy. What an excellent thing for Dr. Groen-

velt! Excellent, indeed; for no sooner did his cures begin to make a noise, than he was at once committed to Newgate, by warrant of the President of the College of Physicians, for prescribing cantharides internally. Blush, most sapient College of Physicians! Your late President, Sir Henry Halford, was an humble imitator of the ruined Groenvelt! Before the discovery of vaccination, *inoculation* for small-pox was found greatly to mitigate this terrible disease. Who first introduced small-pox inoculation? Lady Mary Montague, who had seen its success in Turkey. Happy Lady Mary Montague! Rank, sex, beauty, genius—these all doubtless conspired to bring the practice into notice. Listen to Lord Wharncliffe, who has written her life, and learn from his story this terrible truth—that *persecution* ever has been, and ever will be, the only reward of the benefactors of the human race. "Lady Mary," says his lordship, "protested that, in the four or five years immediately succeeding her arrival at home, she seldom passed a day without repenting of her patriotic undertaking; and she vowed she never would have attempted it, if she had foreseen the vexation, the persecution, and even the obloquy it brought upon her. The clamours raised against the practice, and of course against her, were beyond belief. The Faculty all rose in arms to a man, foretelling failure, and the most disastrous consequences; the clergy descanted from their pulpits on the impiety of thus seeking to take events out of the hands of Providence; and the common people were taught to hoot at her as an unnatural mother who had risked the lives of her own children." We now read in grave medical biography, that the discovery was instantly hailed, and the method adopted, by the principal members of that profession. Very likely they left this recorded; for whenever an invention or a project—and the same may be said of persons—has made its way so well by itself as to establish a certain reputation, most people are sure to find out that they always patronised it from the beginning, and a happy gift of forgetfulness enables many to believe their own assertion. But what said Lady Mary of the actual fact and actual time? Why, that the four great physicians deputed by Government to watch the progress of her daughter's inoculation betrayed not only so much incredulity as to its success, but *such an unwillingness to have it succeed*, such an evident spirit of rancour and malignity, that she never cared to leave the child alone with them one second, lest it should in some secret way suffer from their interference.

How was the still greater discovery of the immortal Jenner received—vaccination? Like every other discovery—with ridicule and contempt. By the Royal College of Physicians, not only was Jenner persecuted and oppressed, but long even after the benefits which his practice had conferred upon mankind had been universally admitted, the pedants of that most pedantic of bodies refused to give him their license to practise his profession in London, because, with a proper feeling of self-respect, he declined to undergo at their hands an examination in Greek and Latin. The qualifications of the schoolmaster, not the attainments of the physician, the locality of study rather than the extent of information possessed by the candidate, were, till very lately, the indispensable preliminaries to the honours of the College. Public opinion has since forced this corporation to a more liberal course. But to return to Jenner: Even religion and the Bible were made engines of attack against him. From these, Errhman of Frankfort deduced his chief grounds of accusation against the new practice; and he gravely attempted to prove, from quotations of the prophetical parts of Scripture, and the writings of the Fathers of the Church, that vaccination was the real *Antichrist*. From all this, you perceive that mankind have not very greatly changed since the time of Solomon, who, after searching the world, returned and saw under the sun that there was *neither bread to the wise, nor riches to men of understanding, nor favour to men of skill.*

(To be continued.)

PREJUDICE.—Prejudice is one of the offsprings of ignorance. The ignorant denounce many things, rather because they have not apprehended the foundation on which those things rest, than because they have weighed them in the balance and found them wanting.

DISEASES OF CATTLE.

"That which nature would do, if unobstructed in her operations, is what must be attempted by the use of medicine. If the powers of nature be debilitated and embarrassed by any cause, and the vital functions languish, we must stimulate the system, rouse the fire, excite the living principle to action, and assist in animating the whole frame." —Dr. Coffin.

"That medicine which will most readily and safely remove obstructions, promote perspiration, and restore a salutary operation of the digestive powers, by exciting and maintaining a due degree of heat and action through the system, is best suited to every state and form of disease, and must be universally applicable to a diseased state of the system."—Dr. Coffin.

To the Editor of the Botanical Journal.

Sir,—The following prescriptions have been found highly useful in treating the distempers and other diseases of horses and cattle generally. *See* Dr. Coffin's Botanical Journal, vols. 4 and 8, pages 56 and 263.

Lobelia seed - - -	1 oz.	Mix.
Composition powder -	1 oz.	
Cayenne pepper - -	1 oz.	
Lobelia seed - - -	4 oz.	Mix.
Cayenne pepper - -	1 oz.	

The remedy which is here offered to the notice of the farmer, and owners of cattle generally, through the medium of your valuable publication, fulfils all the indications of cure in the practice of Dr. Coffin's system of Medical Botany, and approaches nearer to the nature of a "specific" than perhaps any other medicine that has ever yet been discovered or compounded. Of lobelia inflata Dr. Coffin says:—"In our estimation it is more deserving of the reputation of an universal remedy than any other article ever yet enrolled in the vocabulary of medicine." Again: "Composition powder is valuable in the first stages and less violent attacks of disease. It is an admirable medicine, and may be safely employed in all cases; it will promote perspiration, and remove all obstructions caused by cold." Of cayenne pepper, he says—"Practice has proved it to be a *pure stimulant*, that may be safely administered and efficaciously applied under every disease, whenever that stimulant is required for the system. In fact, no other medicine can so successfully restore and retain the vital heat of the body. It is exceedingly prompt in its action, and its power is remarkably evinced by equalising the circulation; thus obviating congestion, arresting hemorrhage, and relieving inflammations. It acts powerfully on the salivary glands without injuring them, and imparts a healthy tone to the digestive organs."

The theory upon which the compound recommended above is designed is, that "health is a free, and disease an obstructed circulation," which involves the fundamental principle of Dr. Coffin's system of Medical Botany, observable both in the vegetable and animal world, viz.:—that an equable distribution of vital heat in the system produces and keeps up a free circulation of the fluids, while the loss or disturbance of the equilibrium of the vital heat is disease in some form or other, as witnessed in coughs, colds, influenzas, inflammations, fevers, &c., &c.

In proportion to the functional derangement resulting from the abstraction of the vital heat, the vital energy is impaired, whereby the secretions are changed in quantity and quality, the digestive process deranged, the circulation impeded, the internal organs more or less congested, and the animal machine clogged like a "water-wheel rolling in back water."

The remedial measures indicated by this state of things is to remove the obstructions and equalise the impeded circulation, by stimulating the vital functions to increased energy, by means of *pure stimulants*, at the same time administering astringents to remove the morbific accumulations which adhere to the lining membranes, and tonics to invigorate the debilitated structures; in short, by assisting the remaining vitality to throw off the cause of the disease, instead of tinkering with the symptoms, we speedily effect a cure. The remedies employed in the practice of Dr. Coffin's system of Medical Botany are well worthy of a fair and impartial trial in the treatment of the diseases of cattle, and would be found far superior and much more effective than the usual routine practice of bleeding, blistering, and other torturing applications, which lower the vital powers, and, in too many instances, increase the fatality of the disease. The stimulants described above have not yet been tried, so far as I am aware, for that diseased state of the respiratory organs, termed "roaring;" but

from their known efficacy in removing obstructions caused by cold, I am of opinion that a judicious combination of them, administered under favourable circumstances, and assisted by appropriate symptomatic aids culled from our herbal pharmacopœia, would considerably abate, if not altogether remove, the accumulation of lymph from the mucous membrane of the air-passages which characterises this disorder. In a little publication on the "History, Management and Treatment of the Horse," by W. Youatt, V. S., we find, that "although a very liberal premium has been offered by a nobleman, as an additional stimulus to the profession, the cure for roaring has not yet been discovered." Here, then, is a novel and interesting field of inquiry and experiment for some of our learned and enterprising Medical Botanists, who may happen to find an opportunity of testing the value of herbal remedies in this hitherto incurable disease. Craving your pardon for troubling you with these somewhat rambling remarks,

I am, Sir,
Yours obediently,
RAILTON BROWN.

7, West Hind Street, Newcastle-on-Tyne, 5th October, 1859.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. FORD respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. COFFIN'S Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. COFFIN'S system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumstances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. COFFIN'S "Guide," and bid defiance to the mineral allopathic practitioner.

ON THE MOUTH, SALIVARY GLANDS, &c., &c.

(Concluded from page 321.)

FROM the general surface of the lips, tongue, cheek, and palate, there is a fluid exhaled. This exhaling surface and all those glands are excited to action by the same stimulus, the excitement of the morsel in the mouth. The saliva moistens the surface of the mouth, assists in manducation, prepares the food to be swallowed and acted upon by the stomach, and accelerates digestion. As the mouth is an exhaling surface, so is it an imbibing and absorbing surface. Calomel may be rubbed upon the mouth so as to salivate.

VELUM PALATINUM; UVULA; ARCHES OF THE PALATE; AND AMYGDALÆ.

The velum pendulum palati is the vascular and fleshy membrane, which, hanging from the bones of the palate, divides the mouth from the fauces. It is not a simple membrane, but has betwixt its laminæ many glands, which open upon its surface by little follicles, and it is thickened and strengthened by muscular fibres, so that it is more like a fleshy partition, stretching backward and eking out the palate, than a hanging membrane.

The edge of the velum palati is not square, but turned into elegant arches; and, from the middle of the arches of the palate, hangs down the uvula, so named from its resemblance to a grape. It is a large, soft, and glandular papilla, peculiarly irritable and moveable, having in it muscular fibres, and hanging from the moveable, soft palate. It seems to hang as a guard over the fauces, and, by its sensibility, in a great degree governs the operation of these parts. It is also part of the organ of the voice.

The arches of the palate or fauces descend on each side from the velum

palati. They are muscular fibres, covered with the soft vascular and follicular membrane of the fauces. There are two on each side. These arches stand at some distance from each other, so that the isthmus of the fauces resembles the double-arched gateway of a citadel, or rather the arched roof of a cathedral, with the uvula hanging as an ornament from the central union of four semicircular arches; for the arches which are apart below are joined above.

Behind the soft palate is the cavity of the fauces, and into that cavity there are openings from the nose. The use of the velum is, that, in swallowing, it may be drawn up like a valve upon the posterior opening of the nose; and there being, at the same time, an action of the arches of the palate, the whole are brought into a funnel-like shape, which directs the morsel into the pharynx and gullet. In this action, the direction of the food assists the valvular action of the velum; but, in vomiting, the nose is assailed with the contents of the stomach. The velum also is a principal part of the organ of the voice; it divides the air which issues from the lungs, and directs it either into the cavity of the mouth or nose.

Amygdalæ.—Betwixt the arches of the palate, on each side, lies a large oval gland of the size and shape of an almond. These are the tonsils or amygdalæ. The amygdala is a mucous gland: it is loosely covered with the investing membrane of these parts: its surface is seen, even in a living person, to be full of large cells like lacunæ; these communicate; and into these the lesser mouths of the ducts open. On a narrower inspection of the amygdala we may describe its structure thus: within the arch of the palate, and before the arch of the fauces, there is a fossa of an oval shape, and on the surface of the membrane a number of cells open like the mouths of veins. When the arches and the amygdala are dissected out behind these holes, we feel a gland, as it were one solid body; but on further dissection from behind, the cellular membrane being taken away, instead of one large gland, there are a number of lesser ones. These glands discharge their secretions into the oblique passages just described; and from these lacunæ the mucus is pressed out when the morsel is pushed backward. From the loose texture, and from its being a vascular and secreting body, exposed to the immediate vicissitudes of weather, the amygdala is often inflamed, and then it impedes the action of the surrounding muscular fibres in the action of deglutition. The use of the amygdala is evidently to lubricate the passage of the throat, and facilitate the swallowing of the morsel; and, for this reason, are the mouths of its ducts cellular and irregular, that they may retain the mucus until ejected by the action of deglutition. In this operation, the amygdalæ are assisted by numerous lesser glands, which extend all over the arches of the palate and pharynx.

HOW TO NURSE SICK CHILDREN.

(Continued from page 328.)

I WILL not take up more time in describing other kinds of rashes which are occasionally seen, but with which, in the course of your duties, you will become familiar. I was anxious only to make you understand the reason for attaching this importance to careful examination of the skin; but there are many things besides to which you must pay attention, for we have supposed that the nature of the child's disease is still uncertain, and that the doctor does not feel himself able at present to pronounce an opinion. You must now, therefore, set to work carefully to watch all the signs or symptoms of illness which present themselves; you must, whether the child is hot or cold, or whether, while one part is very warm, another is quite chilly; you must observe how the child likes to lie, whether flat down in bed, or propped up high, almost as if sitting; whether the light distresses it or not; whether it seems in pain, shewing this either by signs or by actual complaints; while, as night comes on, the changes in its state must be observed with particular care. With the approach of night, very many diseases get worse, and while you expect this to be the case, you must carefully notice what are the signs of increased illness, which in each illness manifests themselves. Fever is generally higher; you must notice if it is very much so: the dull, heavy state

of many children suffering from inflammation of the brain, or for some forms of fevers, in which they lie dozing during the day, is often succeeded by delirium and loud outcries for some hours at night; or if the child sleeps, it talks much in its sleep about its lessons or its play, and the observation that these things have happened will serve to help the doctor in his judgment. If, though these things do not occur, yet the child is restless, you must try to find out the cause. It may be from pain, or it may be from thirst, or from cough, which disturbs the child, or from difficult breathing, which grows worse whenever the child falls asleep, and then wakes him up again every few minutes, or it may be from that sleeplessness which illness brings with it. If, then, you are to give an useful report to the doctor at his visit, you must not merely be able to tell whether the child slept or was restless, but you must have watched so attentively as to be able to describe exactly the manner in which the night was passed, to report when the child slept and how, when it was restless and why. But there are other things to notice besides the manner in which the night was passed; as, for instance, whether the breathing was short, or hurried, or difficult, whether the child coughed, and, if so, whether the cough returned often or seldom, whether it was tight or loose, or short or hacking, whether it lasted long or returned in fits, whether it is accompanied by any peculiar sound, whether it seems to hurt the child or to distress him, either by the length of each cough or by its frequent return, and whether the breathing is much quickened by it. Further, the presence or absence of sickness or of disposition to vomit, the want of appetite, or the existence of thirst, are all points to which your attention must be directed.

Supposing now that you have noticed all these matters with care, you will be in a position to make a report of your observations to the doctor, and one which will be very helpful to him in determining what the nature of the case is. But this report will depend greatly upon its value, upon the clearness with which it is made, and upon your account of what has passed being given very much in the order in which the different things that you observed really happened. Now what I mean by a clear and orderly report will be one somewhat of the following kind: I will suppose that a nurse is giving in the morning an account to the doctor of what she has observed since his first visit to the child on the previous afternoon; and she says to him: "Before being put into the bath the child seemed cold, but afterwards grew quite warm, appeared comfortable, and fell asleep for a little time. When in the bath I noticed no rash on the skin, but this morning there is some redness round his neck and the upper part of his body. He was heavy, and dozed during the afternoon, but towards night became more restless, cried out in his sleep, and seemed sometimes quite light-headed, and his skin was very hot and dry in the night. He appeared very thirsty, craved for cold drink, though he took but little at a time, and seemed to have some difficulty in swallowing; and this morning he does not appear to be any better than he was yesterday. He was a little sick once yesterday, but has not been so since: his bowels acted once last night, the motions were quite natural, and he has made a little water twice. I have saved all that he has passed for you to see." Now from such a statement as this, even before seeing the patient, the doctor would have learned, almost to a certainty, that the case was one of scarlet fever; and it must be quite evident that there is no more real difficulty in the way of giving a straightforward, orderly history of what has been observed, than with telling the same things without any plan or method. All that is necessary is, that from the first you set about it in the right way. If a child, however, is very ill, and there is much to do in the way of giving food or medicine, or if you gather from the doctor's expressions that he regards the child as in very serious danger, I would advise you not to trust entirely to your memory, which may deceive you, but just to put down upon a piece of paper the date at which medicine or food had been given, or when the bowels acted, or when any special change took place in the child's condition. This, too, is still more important if you are very tired by long sitting up and close watching, for

then, even with the greatest care and the best endeavour on your part, many things will be almost sure to escape your memory. What things you are especially to notice must depend very much on the disease from which the child is suffering, the stage which that disease has reached, and the treatment which the doctor is adopting; and through the whole course of the child's illness the signs of its disease, and the effects of remedies upon it, will both have to be carefully observed by you, and points which may in one case be of great importance may in another scarcely need mention.

(To be continued.)

FORMATION AND GROWTH OF BONES.

(*Continued from page* 335.)

If the broken limb be too much moved during the cure, then are the secreting arteries interrupted in their office, perfect bone is never formed, it remains a cartilage, and an unnatural joint is at length produced; but by injuring the bone the vessels are opened again, the process is renewed, and the bones unite; or even by rubbing, by stimulating, by merely cutting the surrounding parts, the vessels are made active, and their secretion is renewed. During all the process of ossification, the absorbents proportion their action; they remove the cartilage as the bone is laid; they continue removing the bony particles also, which the arteries continually renew.

Nothing can be more curious than this continual renovation and change of parts, even in the hardest bones. We are accustomed to say of the whole body, that it is daily changed; that the older particles are removed, and new ones supply their place; that the body is not now the same individual body that it was; but it could not be easily believed that we speak only by guess concerning the softer parts, what we know for certain of the bones. It was discovered by chance that animals fed upon the refuse of the dyer's vats, received so much of the colouring matter into the system, that the bones were tinged by the madder to a deep red, while the softer parts were unchanged; no tint remaining in the ligaments nor cartilages, membranes, vessels, nor nerves, not even in the delicate vessels of the eye. It was easy to distinguish by the microscope, that such colour was mixed with the bony matter, resided in the interstices only, but did not remain in the vessels of the bone, which, like those of all the body, had no tinge of red; while our injections again fill the vessels of the bone, make all their branches red, but do not affect the colours of the bony part. When madder is given to animals, withheld for some time, and then given again, the colour appears in their bones, is removed, and appears again with such a sudden change as proves a rapidity of deposition and absorption, exceeding all likelihood or belief. All the bones are tinged in twenty-four hours; in two or three days their colour is very deep; and if the madder be left off but for a few days, the red colour is entirely removed.

This tinging of the bones with madder was the great instrument, in the hands of Du Hamel, for proving by demonstration, that it was by layers from the periosteum that the bone was formed; and how very far the mind is vitiated by this vanity of establishing a doctrine on facts, is too easily seen here. Du Hamel, believing that the periosteum deposited successive layers, which were added to the bone, it was his business to prove that the successive layers would be deposited alternately red, white, and red again, by giving a young animal madder, withholding it for a little while, and then beginning again to give it. Now, it is easy to foresee that this tinging of the lamellæ should correspond with the successive times in which the periosteum is able to deposit the layers of its substance, but Du Hamel very thoughtlessly makes his layers correspond only with the weeks or months in which his madder was given or withheld. It is easy to foresee also, that if madder be removed from the bones in a few days (which he himself has often told us), then his first layer, viz. of red bone, could not have waited for his layer of white to be laid above it, nor for a layer of red above that again, so that he should have been able to show successive layers. And if madder can so penetrate as to tinge all the bones that are already formed, then, though there might be first a tinged bone, then a white and colourless

layer, whenever he proceeded to give madder for tinging a third layer, it would pervade all the bone, tinge the layer below, and reduce the whole into one tint. If a bone should increase by layers, thick enough to be visible, and of a distinct tint, and such layers be continually accumulated upon each other every week, what kind of a bone should this grow to? Yet such is the fascinating nature of a theory, that Du Hamel, unmindful of any interruptions like those, describes boldly his successive layers, carrying us through regular details, experiment after experiment, till at last he brings up his report to the amount of five successive layers, viz., two red layers and three white ones. And in one experiment he makes the tinge of the madder continue in the bones for six months, forming successive layers of red and white, although in an earlier experiment (which he must have forgotten in his hurry) he tells us, that by looking through the transparent part of a cock's wing, he had seen the tinge of the madder gradually leave the bones in not many days.

I have before me preparations in which we see three distinct layers; and of the general fact there can be no doubt. If I doubt the exhibition of six layers, yet we may draw the same important conclusion from three as from six. Mr. John Hunter said, that in the growth of bone, the inner part was absorbed, while the outer surface had addition; and that the whole bone did not extend, but that the extension of the shaft resulted from an addition to the extremity. But be it at the same time understood, that while the additional increment is on the surfaces and the extremities of the bone, the whole substance of the bone is submitting to change.

By these experiments with madder, one most important fact is proved to us: that the arteries and absorbents, acting in concert, alternately deposit and reabsorb the earthy particles, as fast as can be conceived of the soft parts, or even of the most moveable and fluctuating humours of the body. The absorption of the hardest bones is proved by daily observation; when a carious bone disappears before the integuments are opened; when a tumour, pressing upon a bone, destroys it; when an aneurism of the temporal artery destroys the skull; when aneurism of the heart beats open the thorax, destroying the sternum and ribs; when an aneurism of the ham destroys the thigh-bone, tibia, and joint of the knee; when a tumour coming from within the head, forces its way through the bones of the skull—in all these cases, since the bone cannot be annihilated, what can happen, but that it must be absorbed and conveyed away? If we should need any stronger proofs than these, we have mollities ossium, a disease by which, in a few months, the bony system is entirely broken up, and conveyed away by a high action of the absorbents, with continual and deep-seated pain; a discharge of the earthy matter by the urine; a gradual softening of the bones, so that they bend under the weight of the body; the heels are turned up behind the head; the spine is crooked; the pelvis distorted; the breast crushed and bent in: and the functions, beginning to fall low, the patient, after a slow hectic fever, long and much suffering of pain and misery, expires, with all the bones distorted in a shocking degree, gelatinous, or nearly so, robbed of all their earthy parts, and so thoroughly softened as to be cut with the knife.

Thus every bone has, like the soft parts, its arteries, veins, and absorbent vessels; and every bone has its nerves too. We see them entering into its substance in small threads, as on the surfaces of the frontal and parietal bones: we see them entering, for particular purposes, by a large and peculiar hole, as the nerves which go into the jaws to reach the teeth: we find delicate nerves going into each bone along with its nutritious vessels; and yet we dare hardly believe the demonstration, since bones seem quite insensible and dead. We have no pain when the periosteum is rasped and scraped from a bone: we have no feeling when bones are cut in amputation; or when, in a broken limb, we cut off with pincers the protruding end of a bone: we feel no pain when a bone is trepanned, or when caustics are applied to it; and it has been always known, that the heated irons, which the old surgeons used so much, made no other impression than to excite a particular

titillation and heat, rather pleasant than painful, running along the course of the bone. But there is a deception in all this. A bone may be exquisitely sensible, and yet give no pain—a paradox which is very easily explained. A bone may feel acutely, and yet not send its sensations to the brain. It is not fit that parts should feel in this sense, which are so continually exposed to shocks and blows, and all the accidents of life; which have to suffer all the motions which the other parts require. In this sense, the bones, the cartilages, ligaments, bursæ, and all the parts that relate to joints, are quite insensible and dead. A bone does not feel, or its feelings are not conveyed to the brain; but except in the absence of pain, it shows every mark of life. Scrape a bone, and its vessels bleed; cut or bore a bone, and its granulations sprout up; break a bone, and it will heal; or cut a piece of it away, and more bone will readily be produced; hurt it in any way, and it inflames; burn it, and it dies. This is a deep subject, but a very curious one. The meaning attached to common terms of speech are not applicable here; and hence the obscurity. We would require to define sensation, sensibility, and pain; the liability of the part to be injured and excited to inflame, and the perception of that injury. I come to this conclusion:—The sensation of pain is bestowed as a safeguard to the frame, forcing us to avoid whatever is hurtful. To this effect, sensibility varies in different parts, and in general the sensibility of the more superficial parts, being sufficient protection to the parts, beneath, the deep parts are but little sensible. The sensibility possessed by the skin would not be sufficient protection to the eye; such parts differ in kind of sensibility, as well as in degree. Experiments have been made by cutting and burning the bones and tendons, and the conclusion has been, that they were insensible. But when a man sprains his ankle-joint, he is in extreme pain, though he can easily satisfy himself that the pain he feels is not in the skin, but must be in the joint and tendons. It appears, then, that such parts, usually thought insensible, feel pain, and can propagate that pain to the sensorium; and further, that the peculiar sensibilities are so suited as to allow of the free and natural motion, and of the necessary degree of attrition, but are bestowed for the purpose of making us avoid that degree of violence which would endanger the texture or healthy function of the part.

(To be continued.)

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ON THE SYMPTOMS OF DISEASE.

I last spoke of *symptoms* as being *signs:* these words are not, however, exactly synonymous, although they are frequently employed as if they were so. Even those medical writers, who admit a distinction between them, have not always succeeded in clearly pointing out the difference. Signs are deduced from symptoms, by arranging and comparing these, and noticing the circumstances under which they occur. Symptoms are obvious to all persons alike—to the nurse as well as the physician; signs, for the most part, as such to medical eyes alone. Let me try to make this plainer by the help of an illustration. Symptoms may be considered as resembling so many words: when taken separately, or when put together at random, the words have no force or signification; arrange them in due order, reduce them into a sentence, and they convey a meaning. The sentence is a sign or expression of something which is thus revealed. Symptoms become signs when their meaning can be understood. A certain crackling sound, of which I shall have much to say hereafter, is heard (we will suppose) in some part of a patient's lung, by the ear applied outside the thorax. The sound is a symptom; any one who listens may hear it; it is even so far a *sign*, that it denotes the actual presence of a liquid in the lung, and the passage of air through that liquid. But the liquid may be one of several—mucus or serum, or pus or blood, we cannot tell by the sound which of these it is; but if we learn that the person in whose lung the sound is heard has been ill for a day or two only, that he has pain in his chest, cough, embarrassed breathing, and fever, we conclude that he is labouring under that serious disease *inflammation* of the lung. The crackling sound alone could not assure us of this, nor without the addition of this sign could the pain, the laboured breathing, the cough or the fever be discovered. Taken collectively, the symptoms constitute a *diagnostic sign*, and bespeak the existence of pneumonia (inflammation of the lungs). Sometimes a symptom or set of symptoms becomes a sign by its relation to what has gone before, or to what follows it. To adhere to our illustration, the meaning becomes evident from the context. By comparing, at short intervals, in the supposed case of pneumonia, the extent and character of the sounds heard during respiration, we ascertain whether the disease be advancing or receding, and thus convert the sounds, or their variations from day to day, into a *prognostic sign*. We always strive, then, to penetrate beyond the symptoms to the disease of which they are significant; but we do not always succeed in this, and when we do not (as in the case of ague) we are driven to the necessity of regarding the combination of symptoms as the disease.

Now setting aside the notice of the healthy functions, which is sometimes necessary in order to determine the relative value and meaning of other symptoms, and regarding those symptoms only which consist of *morbid* (diseased) changes, they may all be classed under three heads. First, uneasy, unnatural

or impaired sensations; secondly, disordered or impeded *functions;* and thirdly, alterations of structure or of appearance, changes of *sensible qualities.* When these last come within the direct cognizance of our senses, they are usually called *physical signs.* Uneasy or altered sensations we can only be aware of through the testimony of the patients themselves. The symptoms belonging to the other classes fall generally under our own notice. Uneasy or altered sensations comprehend a large class of diseased symptoms. By their occurrence, persons sometimes become conscious that they are unwell, before any other symptoms are observable. Of all the uneasy sensations, *pain* is the most common and most important. It rarely happens that it is not felt at one period or another, in inflammatory disorders, and it very often occurs, and is very acute too, when there is no inflammation at all. There are many different kinds and degrees of pain; different kinds of diseased action are accompanied by different kinds of pain; and the same kind of diseased action, inflammation, for example, produces different modifications of pain, according as it affects different parts. The pain that belongs to inflammation of the lungs differs from that which is felt in inflammation of the bowels, bones, muscles, tendons, ligaments. The bladder, the kidney, the uterus, all modify, in a manner peculiar to themselves, the pain that is produced in them by injury or disease. Different names are given to the different varieties of pain: thus we hear of a sharp pain, a shooting pain, dull pain, gnawing pain, burning pain, tearing pain, and so on. If pain be felt in a part only when it is touched, it is called *tenderness*, the part is said to be tender: this is a very important kind of pain, for a part may be both painful and tender, or painful without being tender, or tender without being otherwise painful.

INFLAMMATION

Is a subject which must needs engage a large share of the attention of medical men. In nine cases out of ten the first question they ask themselves, upon being summoned to a patient, is, "Have I to deal with inflammation here?" It is continually the object of their treatment and watchful care. All parts that are furnished with blood-vessels are liable to be affected by it, and it affects different parts very seriously. Being more easily excited by many external causes, it is, therefore, more *common* also than any other special disease. A great majority of all the disorders to which the human frame is liable begin with inflammation, or are accompanied by it during some part of their course, or resemble it in their symptoms. Most of the organic changes of different parts of the body recognise inflammation as their cause, or lead to it as their effect. The premature extinction of human life is more often owing to the agency, immediate or remote, of that process which we call inflammation than to any other morbid condition whatsoever. Again, inflammation is highly interesting, not only in its morbid phenomena and destructive consequences, but in its healing relations also. Wounds, no doubt, may be closed, and fractured bones unite without the intervention of any inflammatory process or product, but it is only under rare and very favourable circumstances that such injuries are actually so cured. In almost every instance, whether of a cut finger or of a deep sabre wound, or of a broken limb, it is the resulting inflammation which requires our care, and which furnishes the materials and conditions of repair. It is through inflammation that parts adhere together, when their adhesion is essential to the preservation of the person, and that foreign or hurtful matters are conveyed safely out of the body. Does ulceration occur in the stomach or intestines, and threaten to penetrate through them? Inflammation will often forerun and provide against the evil —glue the endangered membrane to whatever surface may be next to it—and so prevent that worse and universal inflammation of the peritoneum, and the almost certain death, which the escape of the contents of the alimentary canal into that serous bag would certainly occasion. The foot *mortifies*, is killed by injury or exposure to cold. Inflammation, if it be not anticipated by the knife of the surgeon, will cut off the dead and useless part. An abscess forms in the liver, or a large calculus concretes in the gall-bladder; how is the pus or the stone to be got rid

of? If they make their way to the external surface of the organ, as they always tend to do, they might enter the cavity of the abdomen, and excite fatal peritonitis. But a natural safeguard arises, partial inflammation precedes, and prepares for the expulsion; the liver or the gall-bladder, as the case may be, becomes adherent to the walls of the abdomen on the one hand, or to the intestinal canal on the other; and then the surgeon may plunge his lancet into the collection of pus —(this is allopathic treatment: we would say, Excite suppuration by a poultice of slippery elm united with our charcoal poultice, or the charcoal poultice alone, which would be more effectual than the allopath's favourite tool the *lancet*)—or the abscess or the calculus may eat its own way safely out of the body, through the skin or into the bowel. Inflammation, limited in extent and moderate in degree, becomes conservative by preventing inflammation more severe and widely spread, which would be fatal. This is what I mean, when I speak of the curative properties of inflammation; and surely this process, which may save life or destroy it, deserves and demands our most careful study.

But inflammation has a still further and peculiar claim upon our attention. The salutary acts of restoration and prevention just adverted to, are such as *Nature* conducts and originates. But we are ourselves able, in many instances, to direct and control the effects of inflammation; nay, we can produce it at our pleasure, and having produced it, we are able, in a great degree, to regulate its course; and for this reason it becomes, in skilful hands, an *instrument of cure.* This instrument is employed when, after letting out the water of an hydrocele, we wilfully excite inflammation of the tunica vaginalis, whereby its cavity is obliterated and the reaccumulation of the fluid rendered impossible. A fractured thigh-bone fails to reunite, or its fragments become connected by pliant and unserviceable callus; the medical man, using a happy violence, provokes inflammation in the fractured part, and a firm and bony union gives back to the limb its former strength and usefulness. It is by availing himself of the same agent he is enabled to remedy many afflicting deformities—to unite the cleft lip, to knit together the fissured palate, to restore the dilapidated nose. There is no other special disease which is thus at our command; we cannot, if we would, create a tubercle or a cancer. For all these reasons inflammation possesses a very high degree of interest for us, and for every one who would inquire, with any prospect of success, into either the pathology or the treatment of diseases.

(To be continued.)

HOW TO NURSE SICK CHILDREN.

(Continued from page 346.)

Thus, for instance, if the doctor fears that a child is about to suffer from inflammation of the brain, or water on the brain, your telling him the child has been sick once or twice, or that it had no relief from the bowels, or that it had seemed very cross and irritable, and then afterwards had been very drowsy, would be information of great value, giving reason to fear that the child was much worse. If, however, the child had been suffering from an attack of bowel-complaint or diarrhœa, as it is called, sickness is a very common symptom, which need not alarm you; the absence of action of the bowels would be a favourable sign. Stomachache would naturally have made the child cross and irritable, and its going to sleep afterwards would show that the pain must have abated, and that the child was in all probability better.

It is, of course, only by degrees you can expect to learn what the most important symptoms are, showing that the head, or chest, or stomach is the seat of disease; but time will bring to you this knowledge; and if you set out, just bearing in mind some very simple rules, you will not be long in acquiring it. For instance, remember that it is the brain governs our power of talking, and our power of moving, and is as it were the fly-wheel which sets all the machinery in motion, and you will then expect to find the manner, disposition, likings and affections altered when the brain is diseased, and the power of moving and talking more or less interfered with. But next you will recollect that the child has not yet learned to do with his brain all the

things which the grown person can; that he cannot talk perhaps, or cannot walk, or that he knows very little, and can remember very little of what passes around him. You will then be prepared to find the child with disease of the brain cross and fretful, not liking any of the things that usually amuse it, burying its head in the pillow to keep out the light, crying if a light is brought into the room, or if suddenly disturbed, or if any noise is made near it, and perhaps taking a great dislike to those of whom it used to be most fond. Often, too, it will cry out aloud, for cries are its only language, if it is very young; and even if able to talk, the effort at speaking sets the brain at work, and if the child's brain is suffering, all work must be painful to it. If you take the child up in your arms to sooth it, as you have often soothed a sick baby before, the child seems frightened and distressed; it is dizzy and afraid of falling; feels, in short, just as you may have felt sometimes, if, from suffering from a bad sick-headache, you have been compelled to get out of bed.

In the same way you will bear in mind that the lungs serve in breathing: if they are diseased, you will look more to how their duty is performed, and will at once feel that the child's cough, the number of times that it draws its breath, the ease or difficulty with which it lies flat down in bed, the side to which it turns when in its cot, are the things for you to notice chiefly; or, if the disease is in its stomach, the appetite and thirst, the presence of vomiting, the state of the bowels, the cries of pain or the actual complaint of its existence, and the degree of tenderness on pressure, are evidently enough the most important symptoms, and those concerning which the doctor will look to you for information. I will now, therefore, go a little more into particulars, and will try to point out to you the more important things that you will be expected to notice and to do, in the greater number of cases of diseases of the head, chest and stomach respectively; and will then lastly make a few remarks to you on the nurse's duties in fever.

In most diseases of the brain in childhood which threaten life, there are two distinct stages, as they are called, in the first of which there is excitement, in the second, stupor; or, to state this more simply, the disease may be divided into two halves: in the first half, the child is in pain, and shows its pain in various ways; in the second half, the sense of pain is gone, but the power of feeling is gone too, or greatly lessened. In the first the mischief is doing; in the second the mischief is done.

Now I have already told you what many of the symptoms are which show the brain to be disordered in children; that light, and noise, and movement distress the little one; that its temper is altered and its manner fretful, while the pain very often causes it to cry aloud. Besides these, there are some other signs of disorder of the brain which I will just mention to you, and if you do not understand *why* their occurrence shows the brain to be affected, you must, nevertheless, try to bear them in mind, and must take my word for it, that what I tell you is correct. Sickness and vomiting are a sign of disorder of the brain; convulsions are another. Now you may fancy, that sickness is only a sign of disorder of the stomach, and may feel at a loss to understand what it can have to do with the brain; I will, therefore, try to explain the matter. From the brain itself there pass to all parts of the body *nerves*, as they are called; small strings, as it were, which go everywhere, and thus keep up connection between all parts. We wish to move our arm or leg, and when we try to do it, we send a sort of message there, just as a message is sent along the wires of the electric telegraph, and then we lift the weight or take the step we wished to do. But these nerves or strings serve another purpose, too; they carry the news from one part of the body to another, if any suffer; if the leg is in pain, the nerves tell the brain of it; and if the brain is ill, the nerves tell even the legs and arms of it; as I dare say you may have found some day, when, very ill with headache, you have also felt pain all over you. But the brain has other work to do: there are many important parts of our body which we cannot see, over which we have little or no influence; we cannot help breathing, or digesting our food, and so on; and yet if the brain is

out of order, all the duties of these different parts (*functions*, as doctors call them) cannot go on quite well, for the brain, as I said, is like the fly-wheel which sets all the machinery in motion. This effect of disorder of the brain shows itself in various ways, but in none more strikingly than in the way in which it produces disorder of the stomach. The brain suffers, and the stomach is told of it, and feels it; little children, you know, are easily made sick, and so with them there is not only the feeling of sickness, but there is actual vomiting; and it is of importance for you to remember this, in order that you may not omit to mention its occurrence to the doctor in any instance in which an infant or young child is fretful and feverish, and cannot bear the light, or noise; for the sickness shows that the disorder of the brain has been serious enough to derange its stomach.

CONSTITUTIONAL TREATMENT OF FEMALE DISEASES.

It is a remarkable fact that many of the higher grade of allopathic medical men, who stand high even in the estimation of their brethren, as well as among the public men of enlarged minds and capacious intellect, have been imperatively forced to adopt one of the leading principles of Dr. Coffin's Medico-botanic system of medicine, and thereon to found their practice, perfectly conscious of its vast importance. Hence its adoption by them, yet unconscious, or unwilling to acknowledge, that such a principle formed a leading feature in the practice of Dr. Thompson, of America, long before they made the healing art their study, and since brought into England by that great Medical Botanist, Dr. Coffin, who is contemporary with them.

These observations are elicited through reading a work on the "Constitutional Treatment of Female Diseases," by Dr. Rigby, M.D., F.R.C.P.L., &c., &c., who states that "The experience of every observing physician demonstrates the fallacy of attributing much curative power to merely local means of treatment, and proves the utility of embracing large views of *general* or *constitutional management*. Abernethy displayed this in vivid colours to the surgeon; and the physician will also reap an ample reward in the cure of disease, if he devote himself earnestly and perseveringly to the discovery of those constitutional defects and disorders which, hidden it may be from the sight of superficial observers, so constantly lie at the root of most of those phenomena the local manifestations of which are too often looked upon as the essence of the complaint, and the sole objects of treatment."

"We are glad to find," says the editor of the 'British and Foreign Medico-Chirurgical Review,' "that Dr. Rigby has publicly enlisted himself amongst the number of those physicians who place their chief reliance, in the treatment of the diseases peculiar to the female, upon constitutional measures." The first three chapters of Dr. Rigby's work comprise the subjects of amenorrhœa (obstruction of the monthly flow), dysmenorrhœa (difficulty in ditto), menorrhagia (immoderate flow of ditto).

With regard to the first, like other functional derangements of the uterine system, it is in fact a *symptom*, an effect of general derangement; and as the doctor justly observes, it behooves the practitioner to look beyond the mere local affection, and carefully investigate the defective actions of the system upon which it essentially depends. It is, undoubtedly, a great mistake to imagine that the absence of this natural secretion is the *cause* of the numerous ills that accompany its retardation or suppression, although such is a very prevalent and convenient doctrine. Nothing is easier than to convince an anxious mother that her daughter's deteriorated health and sickly appearance depend upon this irregularity; it is, indeed, so natural for her to think so, that the practitioner needs no other explanation to satisfy her anxious inquiries. Does not this facility of accounting for diseased appearance often lead to an equally superficial method of treatment? And does not the young sufferer sometimes fall a sacrifice to the inroads of constitutional and organic diseases? Whilst attempts are vainly being made to excite the appearance or reappearance of the flow, its absence simply depending upon the demands made by other diseases upon the system, rendering it unable to establish

or continue those functions of the uterus which otherwise ought to exist. In vain shall we, under such circumstances, administer special emmenagogues: until the constitutional powers are restored, no good effect will be produced. And thus we find the best emmenagogues are fresh air and exercise, and such medicines as are most calculated to regulate the bowels and improve the general health.

Dysmenorrhœa is referred to the following separate heads:—

1. It may be connected with derangement of the digestive organs.

2. It occurs in a gouty or rheumatic habit of body.

3. Or it may be of an hysterical or nervous character.

4. It occurs in connection with some inflammatory action of the uterus, usually the mouth and neck.

5. It arises from ovarian irritation.

The presence of one or other of these causes, must, of course, influence the treatment in each particular case, and general principles must be our guide. The symptoms attending that particular form of dysmenorrhœa in which the ovary is the chief seat of pain are well described in the following abstract:—"The organ becomes highly congested or actually ininflamed; it swells considerably, and becomes intensely sensitive; the pain is of the most agonising character, and is frequently attended with severe nausea or obstinate and most distressing vomiting. The patient describes it as being different to any other pain she ever experienced, and dreads a return of the attack; and it is of a peculiarly unbearable, sickening character."

SUCCESSFUL TREATMENT OF THREE CASES OF CHOLERA BY BOTANIC MEDICINE.

Case, No. 1.—This was a female, aged 60. Laborious employment, connected with unpleasant smells. Name, Mrs. Courtman. Residence, Wood Street, Hartlepool. This female had, previously to sending for me, sent for an old-school doctor, who refused to attend, making some petty apology. This is a specimen of another case out of hundreds of the poor, who are lost for the want of medical aid. About half-past eight o'clock on Sunday evening, July, 1859, I was requested to visit this female, represented to be breathing her last, informing me she was taken with vomiting and purging, also cramped, about two o'clock that afternoon, and, failing to procure medical aid, administered brandy; still she gradually became worse. I went, after telling the party I doubted she was too far gone for me to save her. Found her in bed, severely cramped in the hands, feet, and bowels. She made signs to have them rubbed freely. I had recourse to rheumatic liniment, also a poultice to bowels of hot bran and mustard mixed with the above liniment, and a hot brick with vinegar cloths to the feet. Administered the anticholera powder freely. At nine o'clock no pulse to be observed, breathing difficult and painful, with body and lower extremities cold; after which the cramp seized the jaw, partly locking it. Gave the third preparation of lobelia with an addition of cayenne; and at ten o'clock found I had gained an equilibrium; after which I gave the lobelia emetic with stimulants, the chief astringents and bayberry, which made the patient vomit freely. The purging and cramp abated between ten and eleven o'clock. Observed strong muscular action of the chest, with alarming symptoms of gasping for breath, also fighting or twitching of the arms and body in all directions. Administered the stimulants more freely; the muscular action of the thorax abated. Pulse perceptible, but too feeble and intermittent to count. Ordered a basin of sago with cinnamon to be made, and left for home at half-past eleven o'clock. Returned at eight next morning; found the patient quite easy, but very weak and feeble. No appetite, a heavy thirst, stools hourly and urine scanty. Sent a bottle of astringents, stimulants, tonics, and mucilaginous, a tablespoonful to be taken every two hours, with a composing powder at bed-time of valerian. Called next morning at ten o'clock. Found her sitting up, taking breakfast; great deal better, good night's rest; only one stool during the night; urine free; tongue clean; pulse stronger and more regular, the veins being observable; breathing a good deal better; and calling on the following day found her out at her employ,

charing, being at the present time as well as she had been for years. Trusting this may be a caution to those who are timid, and say, This is no time for speculating, go for the old-school doctor, some foolish neighbour observing, "What does the Botanist know? He has not walked the hospitals: how can he understand the human system?" No; we have *bribed* no *grinder*, nor *examiner*, but appear in our true robes, with the balm in our hands, whereby man's diseases are healed, and he is once more set free from the jaws of death and allopathic torture.

Second case, also a female; age about 37, name Hutson; residence Storey's Farm, about one and a half miles from Hartlepool. I was just coming from the undermentioned case, and just lain down to rest. The husband came for something for his wife, for she was purged, vomited and cramped nearly to death. Gave him the anticholera powder, with rheumatic liniment, ordered a hot brick folded in vinegar cloths to feet, and to rub the liniment in freely, to administer the powder every quarter of an hour. He informed me he had applied hot-oven shelves to the body, with ginger tea, renewing them as soon as cold, which brought the words of Dr. Coffin to light, the introducer of this benevolent and beneficial system, that heat was life, cold was death, which cramp is the forerunner of—even from this poor simple son of nature. Oh! the blushing effrontery of the wretched pretenders of allopathic science! who apply blisters outward, to make their patients feel, and give them calomel with arsenic, likewise a sleeping draught of morphia, to carry them to their last home; by which the people acknowledge the cure is done scientifically and legally; some people preferring to die under an old-school doctor, sooner than to be cured by a Botanist. I went to see this female the first after rising: found her still cramped, but doing tolerably well with the medicine prescribed; her eyes heavy, sunk in her head. I made up a bottle similar to the first; called to see her again in the evening; a great deal better; and on the following day when I called, she was sitting with her little ones, quite hearty, by the fire. I told her to be cautious not to catch cold, and questioned her why she delayed sending, and not to delay in future; to which she replied, she was terrified of a doctor entering the house, for they "generally made her worse;" in the words of Thomson, gave sup to-day; poison to-morrow; one to kill a little; the other to heal a little; and run a long bill, to bring back the interest of their money which they paid for a wrong, sad and mad study. I explained the difference of the two systems to her, that instead of forcing nature to surrender, which is contrary to her laws of life and motion, we assist her, with life-restoring balms, to overthrow the disease, by which health is restored; assuring her, if we kept our patients long, we should lose our credit, and be compelled to fly to law legs to prop our system up, and protect us in our villany; as the allopaths did last session. Weak must be their system, and quite unlike ours, for the more it is scrutinised the brighter it shines.

Third case and last of cholera, with typhoid fever; a male, aged about 27; employment, mariner; residence, Portsfields; name, Ives. I was requested to attend this patient, September 12th. Went to see him at five in the evening. After questioning him to all particulars, he informed me he had been ailing a long time, and could not tell what he ailed; but he was violently seized with purging that morning, also sickness with cramp, and a severe pain in the bowels, stools copious and fœtid. Ordered mustard poultice to bowels; after it came off, hot bran. Gave a bottle with vervain, valerian and anticholera, to be taken as freely as possible. At nine o'clock, being a little easier, I left him, and was knocked up at half-past twelve next morning; found him still "heavier handled;" pain in the bowels returned also; inflammatory, denoting typhoid enteritis; stools very copious; pulse too quick, about 100. Administered the emetic of lobelia, with composition and myrrh, freely, after which he vomited; pain abated a little. He complained of being cold; put more clothes on the bed, with hot brick to the feet, and he was quite easy to what he had been; ordered a cup of tea, and left. Returned on the 13th; pain rather abated; fever very high, but urine middling free; stools very free and fœtid; great pros-

tration. Sent a bottle of tonics such as centaury and quassia, astringents, mucilaginous, stimulants, vervain, prickly ash, nervines, not forgetting the myrrh, as an antiseptic; gave an injection towards afternoon, made of starch, slippery-elm, bayberry, gum myrrh, lobelia, composition, with skullcap. On the 14th, bowels quite reduced twice in twelve hours; middling night's rest; fever abated; tongue still very much coated; prostration; heavy pain in kidneys; not much appetite; thirst great. Ordered chicken broth; and on the 15th found him a little better; good night's rest; urine free; fever abated; tongue much cleaner; bowels costive. Sent a pill composed of aperients and correctives for liver; and on the 16th up and doing well; out on the 17th, and is now following his employ, in good health, feeling convinced, both himself and friends, that if he had had the old-school treatment, he should never have recovered.

THOMAS BROCKIES.

Northgate Street, Old Hartlepool,
October 7, 1859. *County of Durham.*

REMARKS ON MRS. BROCKIES' CASE.

MR. EDITOR,—I see, by perusing Dr. COFFIN'S Botanical Journal, Nos. 296, 297, that it contains a case of persecution of Mrs. Brockies, headed, in the Botanical Journal, "Alleged Death from incompetent Medical Treatment;" and by the first glance by Mrs. Brockies' enemies, I should have concluded that she was incompetent in that case, but when I read the case through, with Mr. Brockies' letter, and both sides put together, in my opinion I saw it was a case or rather a failure of malice which has been exhibited of late. I just wish to remind those who have this incompetent trial to the "Manchester Courier" of Saturday, October 1st, 1859, to that part headed "Female Accoucheurs" (addressed to the editor), and there they will see the corruption of manmidwives. It is true the allopaths have shown their opposition in Hartlepool, as well as elsewhere, to the rise and progress of Medical Botany and Botanists, but they will never be able to cast it down, and the more they persecute it, the further it will spread with its usefulness, showing, at the same time, the unwholesomeness of minerals as therapeutic agents, as well as Dr. COFFIN'S valuable vegetable simple remedies. A word to the Botanists as practitioners. If you look back on both Dr. Thompson's and Dr. COFFIN'S lives, you will find their lives through have been attended with persecution by the allopaths; and those interested in the allopathic system have done to the utmost of their power to undo what Drs. Thompson and COFFIN had done. Ofttimes has this happened, and yet we find the venerable man Dr. COFFIN still in the field, undefiled in his principles, and as energetic as ever, expounding his principles to those who think proper to entertain them. Where is there a man like Dr. COFFIN in England, I may say in the world, who has stood the persecution of the faculty, and with such success he has laid the foundation of Medical Botany in England, which can be understood by all? I, for my part, like Mr. Brockies and the Methodist of old, will cleave to my integrity, ever daring to oppose monopoly, if I suffer a martyrdom, so that at the last moments of my life I may not suffer a martyrdom in my mind like Dr. Baillie, who, when he came to lie on his deathbed, said he had "no faith in physic," and "he could die contented if he could be sure he had cured as many as he had killed." (This was after forty years' experience.) You will bear in mind, my readers, I have my enemies (as well as my friends), who would lead my footsteps to destruction, if it lay in their power, like Mrs. Brockies' enemies. If Mrs. Brockies had used the forceps instead of the lobelia, they might probably have had an occasion to institute the legal inquiry which they have done; nevertheless I hope Mrs. Brockies will still continue her calling, "though winds doth blow and tempests roll." We, as agents, may all meet in heaven at last, having made our calling and election sure, and having done our duty to our fellow creatures. Mr. Editor, I should not have troubled you, but I have heard something in connection with Mrs. Brockies' persecution that was not, I think, just; therefore, if Dr. COFFIN deem it advisable to have this inserted in the Journal, it will oblige, &c.,

KIRKIS SOUTHERN.

Whaley Bridge, near Stockport, Derbyshire.

MEDICAL REFORM.

PUBLIC ADDRESS.

BENJAMIN V. SCOTT, Agent to Dr. COFFIN for Oxford and its vicinity, issues this circular to thank the public for their support during the last six years, in which he has practised Dr. COFFIN's system of Medical Botany, and takes it as a proof that his advice and services are appreciated that many thousands have placed themselves under him, the *majority* of whom he has been the means of *curing*, and many of them of long-standing and painful maladies; and has the testimonials of some that they owe the preservation of their lives to him. And as his object has been that which should actuate every physician—namely, *to lessen the sum of human misery*—he reviews the past with unmingled feelings of *pleasure and satisfaction*.

For the future he has the most sanguine hopes; for, in spite of much opposition, bigotry, prejudice, and ignorance, the sick still seek his advice, and numerous applications have been made to him to visit districts forming a circle of thirty miles round Oxford — proving that Medical Botany is one of those *real reforms*, conferring advantages on the public not before enjoyed. To all who may seek his advice, B. Scott wishes to say, that to *cure his patients is his main object*, to which all others yield. He is as solicitous for a *speedy cure* as they themselves, and the warm thanks of grateful hearts is more highly esteemed than many fees; and should it be ever otherwise, he will give up the practice.

He is still aware of the counterfeits of the botanic practice, of the many schemes to deceive, such as to make the public incredulous, and afraid to rely on the *honourable;* but he is quite certain that the reputation of the practice connected with his Oxford establishment, and his residence in Oxford for more than thirty years, will place this announcement beyond suspicion. The numerous gang of roaming lecturers, travelling the country under various names, extorting money for trashy medicine, have no connection with Dr. COFFIN or his agents. The respectability of their practice is ensured by the exclusion of all who have not "*a local habitation and a name*," and the safety of the public by Rule 7, which enacts "that any member who shall knowingly sell, prescribe, or administer poisons or minerals, or otherwise expose the system by inconsistent practice, shall immediately forfeit his membership." And each medical practitioner is certificated afresh every year, to protect the public against some who *assume* the *name*. Bleeding, blistering, leeching, mercurial pills, calomel powders, opium or composing draughts, we place among the cruel and barbarous practices of the dark ages, and believe that the day will come when it will be penal to administer them under the *false* name of medical science. Why is the grave filled with the young? Why do 60,000 die annually of consumption? Is there no remedy provided? We believe there is. Why are so many groaning under the effects of mercury? How is it that we so often hear it said, "Ever since I have had the fever I have never been well?" The skin, which before never knew an eruption, has since never been free. How is it that dropsy, deeply seated, so often follows an illness, and why such darting pains ever after, rottenness of teeth, fœtid breath, &c.? Why? It is because the secretions have been arrested, nature insulted, the system poisoned, by *unnatural mineral and poisonous remedies*, and especially mercury. Let the medical men answer for us. Dr. Dickson calls it the "*destructive art of healing*." Dr. R. Howard said, "there are few persons in this country whose constitutions have not been injured by calomel."

B. Scott having had some experience during six years' practice, has had many opportunities of contrasting the two systems. The public may test, that we can raise the fallen without *alcohol*, remove inflammation without *bleeding* or *blistering*, restore tone to the nervous system without *opium*, remove pain without *stupifying the brain*, and overcome the most dire diseases, if within human aid (for we are only humble instruments in the hand of the Divine Being), by simple remedies which a beneficent Creator has furnished.

In conclusion, B. Scott thanks those members of the medical profession who, having witnessed his cures, have expressed surprise, and instead of jealously persecuting, have aided and commended the system; and he begs to say that he

shall feel happy, at any time, to take any critical case they may favour him with, and prove the power of botanic remedies: and as it has long been an admitted fact *that mineral medicines are a positive evil, which have "done more harm than good to mankind,"* he who can cure disease without them, is a *public benefactor*, and those of the medical profession who *really are* (what all should be) the *conservators of the public health*, must *rejoice in it*, and view the system of Medical Botany as an important auxiliary, and not as a rival system—and that man must be sadly wrong, in head or heart, who would fain "*cast out*" one who *casts out disease*, "*because he follows not us!!*"

GENUINE TESTIMONIALS

Selected out of some thousands of cases, all of which live in or near Oxford, and may be consulted as to their veracity. When the name is not given it may be had on application to me.

Bicester, September, 1859 (7034).

SIR,—For the good of the sick in Bicester, I have pleasure in bearing my testimony that I owe my present health to you, as a means under God. For a long time I tried the usual doctors, and I believe they tried all they could to cure me, as I was once told by a medical man that he knew not what next to apply; at last I came to you in Oxford, and in about three months, I am happy to say, I was restored. I rejoice that you have opened a dispensary in Bicester, and hope hundreds will be wise enough to try the same system which has imparted health to me.

Yours truly, —

Coombe, Oxon, July 12th, 1859 (7384).

DEAR SIR,—As I have derived great benefit from Medical Botany under your treatment, I feel happy to speak in its favour.

When I applied to you in February last, I had for several months been suffering from debility of the system and depression of spirits. My nights were nearly sleepless; I was almost incapacitated for my duties, and was on the point of giving them up when I saw your advertisement. A friend advised me to call and see you. I could scarcely summon resolution to do so, and when I entered your dispensary, it was as a *sceptic*. I even thought I could hear what you said, but should not be obliged to take your medicine; but, to my astonishment, *you seemed to understand my complaint better than other medical men whom I had before consulted*, although I was not very explicit at the first interview. Your advice was *contrary, in many respects, to that which I had previously received*. My scepticism was then somewhat shaken by you, and afterwards quite overthrown by your medicines. I seem almost like a new being. I can now, I am thankful to say, perform my work without its feeling irksome. I take every opportunity of recommending your system of medicine, and I am confident I cannot too strongly do so. I should have written to you at an earlier date, but I wished to see whether the benefit I had derived would be permanent.

I may add, in proof that the above is not a solitary instance, that *three of my friends* have derived great benefit from Medical Botany, all of whom had previously obtained some of the best advice from physicians.

I am, dear Sir,

Yours, &c.

P.S.—You are at liberty to give my name and address to any one wishing for it. I should feel happy to correspond with them on the subject.

Headington, July 15th, 1859 (7557).

DEAR SIR,—I have great pleasure in bearing my testimony to your system of medicine. Had not my wife been directed to come to you, I certainly must have been a dead man. I shall always feel myself indebted to you, and to Providence who directed me to you.

Yours,

T. FAULKNER.

ON CONSUMPTION.

As regards consumption, it originates in all latitudes, from the equator, where the mean temperature is 80°, with slight variations, to the higher portions of the temperate zone, where the mean temperature is 40°, with sudden and violent changes. The opinion long entertained, that it is peculiar to cold and humid climates, is founded on error. Far from

this being the case, the tables of mortality of the army and navy of this and other countries, as well as those of the civil population, warrant the conclusion that consumption is more prevalent in tropical than in temperate countries. Consumption is rare in the Arctic regions, in Siberia, Iceland, the Ferro Islands, the Orkneys, Shetlands, and Hebrides. And in confirmation of the opinion that it decreases with the decrease of temperature, extensive data shows that in northern Europe it is most prevalent at the level of the sea, and that it decreases with increase of elevation to a certain point. At Marseilles, on the sea-board, the mortality from this cause is twenty-five per cent.; at Oldenburg, eighty feet above the sea, it is thirty per cent.; at Hamburg, forty-eight feet above the sea, it is twenty-three per cent.; while at Eschwege, four hundred and ninety-six feet above the sea, it is only twelve per cent.; and at Brotterode, eighteen hundred feet above the sea, less than one per cent. It is calculated that in the temperate zone, within which nearly all the civilised inhabitants of the globe are located, at least one-tenth of the population die of this dreadful malady. It is uniformly more fatal in cities than in the country. In England, the excess in cities is equal to twenty-five per cent. The greatest mortality occurs from the age of fifteen to thirty.

DR. COFFIN'S BOTANICAL JOURNAL.

W. B. Ford respectfully announces to our agents, our friends and readers, and all those interested in the inestimable cause of Dr. Coffin's Medico-botanical system, that the eighth volume of the Botanical Journal is now ready, which, with the seven volumes already published, are reduced in price and offered for two shillings and sixpence per volume, which are charged thus low in order to place them within the pecuniary means of the humblest of the well-wishers to our cause.

These volumes contain a vast amount of information connected with Dr. Coffin's system, which, studied with his "Guide to Health," cannot fail to impart indispensable information for the preservation of health and life, without rendering it necessary to have recourse to the regular practitioner upon every trivial occasion, or, indeed, under any circumtances; thereby not only preventing an allopathic prolongation of disease, but also its invariable consequence, such a demand upon limited means as to make the calling in of a regular medical attendant an object of alarming importance. Again we say, study these volumes in conjunction with Dr. Coffin's "Guide," and bid defiance to the mineral allopathic practitioner.

VARIETIES.

To prevent Rust.—Melt together three parts of lard and one part of resin. A very thin coating will preserve ironwork, such as stoves and grates, from rusting during summer, even in damp situations.

Might and Right.—In all battles, if you await the issue, each fighter has prospered according to his right. His right and his might, at the close of the account, are one and the same. He has fought with all his might, and in exact proportion to all his right he has prevailed. His very death is no victory over him: he dies, indeed; but his work lives—very truly lives. Fight on, brave, true heart, and falter not, through dark fortune and through bright! The cause thou fightest for, as far as it is true, no further, yet precisely so far, is very sure of victory.—Thomas Carlyle.

A Life-Preserving Coat.—Some experiments have been made at the Mayfield Baths with a waterproof coat, manufactured by Messrs. Macintosh and Co. The coat contained a number of air-tight compartments, which can be inflated by the wearer, in a couple of minutes. When in the water the coat not only supported the wearer, but, so buoyant was it, that he was enabled to support two others. The coat is furnished with pockets high above the line which the water reaches, which can be filled with provisions and valuables.—*Manchester Gurdian.*

Physiognomy.—The whole of physiognomy is a self-delusion. It is undeniable that certain habits of thought, of feeling, of passion, will leave pretty legible traces upon the countenance; yet these traces being so far removed from the cause as to be only the signs of some of its effects, are much too vague, too uncertain, to enable us, through them, to form any conception of that cause. We wish to give every one his due. There is much sublimity in some of the speculations of Lavater; but the theory they support is, in the extreme to which he has carried it, absurd. The universal instinct in mankind proves nothing, though Lavater seems to think otherwise. We know those instincts are far from being infallible every man's experience tells him of men whose aspects are as forbidding as their tempers are amiable. To be sure, the ill-disposition might *once* have existed; but, surely, it is wretchedly unjust to judge a man by what, at some indefinite

period of time, he might have been, and take no notice of what he is. Yet this is what physiognomy must ever do.—*Monthly Magazine.*

Buttermilk for the Complexion.—In the northern countries, where as yet the cosmetics of the perfumer are almost unknown, it is a common practice for young ladies who desire to be beautiful (for beauty is as much estimated in the north as in the south) to bathe the face with buttermilk, in order to remove the effects of the sun-freckles, tan, &c. As buttermilk is a soft, unctuous fluid, there is no doubt, that if it were used daily as a lotion, it would tend to render the skin soft and delicate. In France, especially in the rural districts, the ladies rarely apply soap and water to the face, but wash the skin with butter; that is, a little butter is rubbed over the face with a very soft towel, and all trace of grease is then removed by a second clean, soft cloth. The French belles are reputed throughout Europe for the beauty of their skin. A favourite cosmetic in Sardinia is *Citron au lait*, or milk of lemons as we should term it, and which is made thus:—Rasp off the peel of a lemon with a nutmeg-grater; let the raspings fall into a pint of new milk; now cut the lemon open and press its juice into the milk. After standing a short time the milk will curdle; the whole is then to be strained through fine muslin. The liquid which runs through is the "milk of lemon" sought for. When used as a lotion, its effect upon the skin is similar to the buttermilk of the north.

Accomplishments.—No two words are so much mistaken and confounded with each other as education and accomplishments. Call a person accomplished, and the general impression is that he is a very pattern of education and superior wisdom. But this is a very great mistake. There are many well-educated persons who are not at all accomplished, and there are many who are called accomplished, who upon points of general information are exceedingly deficient. Education is of a far superior order to mere accomplishments. No one can be properly educated unless by a process of self-culture, calling forth all the powers of his mind; whereas accomplishments are of a more mechanical nature, and may be attained by comparatively trifling exertion. Music, dancing, singing, and numerous other accomplishments, are now within the reach of many; and the fact of their being eagerly sought after, proves that no great power of mind is required in attaining a knowledge of them. There are, of course, some few exceptions; but where can we find a rule without them? Accomplished young ladies have been frequently, and judiciously, satirised; and their affected delight in being supposed deficient in general knowledge has been held up to merited derision. No doubt the friends of the young lady—who thought "cucumbers grew in slices," and who wondered "what those things were" that grew on cows' heads—imagined her to be a great genius; and it is certainly very remarkable how deficient in common sense some of the great geniuses are. The mistake made in confounding education with accomplishments, causes the former to be blamed for many of the faults occasioned by the latter.

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 47.

ON THE SYMPTOMS OF DISEASE.

Pain often takes place, not in the part really affected by disease, but in some distant part. Inflammation of the liver or diaphragm may cause a pain in the right shoulder; the mechanical irritation of a stone in the bladder produces pain at the extremity of the urethra; inflammation of the hip-joint occasions pain in the knee; disease of the heart is often attended with pain running down the left arm; many headaches result from irritation of the stomach. We call these instances of indirect pain. Some of them admit of no very obvious explanation; others have been ascribed to connections between the sentient nerves of the two parts, "especially when the part really injured is internal, and that to which the feeling is referred is external, and both derive their sentient nerves from the same larger branches." You will perceive that a due estimation of these sympathetic pains is of no small importance.

I may observe of pain in general that it is differently felt, or, at any rate, differently complained of, by persons of different constitutions and temperaments. There are even, I fancy, *national* differences in this respect. I have been present, as you may believe, at a great number of surgical operations, and I have been struck with the different degrees of patience with which the same operation has been borne by Irishmen and by Scotchmen. The Irishman, generally speaking, either feels more acutely, or gives more free vent to his feelings in cries and exclamations; the Scotchman, on the contrary, most commonly preserves a resolute silence. In complaints associated with lowness of spirits and hypochondriacal feelings, there is reason to believe that the pain spoken of often depends, in a great degree, upon the eager attention that is paid to it. The accounts given by the patients of their suffering are always to be received with some allowance, and this is sometimes an embarrassing circumstance in practice. Patients take it ill if they do not seem to be implicitly credited; and yet, if they are not convinced that much of what they suffer depends on their undue attention to it, they will never get well. You will often find that they cease to feel pain—that is, they forget to think of their complaints—when their attention is otherwise strongly arrested, as by conversation or by music.

The pain of various painful diseases admits of relief, in various degrees, from the resources of medicine. The pain more dreadful and more dreaded, and so long exacted in the capital operations of surgery as the inevitable price of future ease, or as the instant ransom of life, has happily found, in our times, *its specific antidote.* By the mere breathing, for a few minutes, of an invisible vapour, the corporeal sensibility is laid asleep, and the knife, the gorget, or the cautery executes, at leisure and unfelt, its terrible but salutary work. To charm ache with air is no longer the poet's mock. Half a century ago was this blessed invention suggested by the sagacious mind of Sir Humphrey Davy; but his hint fell profitless upon our negligent ears, and the glory and the triumph of the discovery (for in such

things, to proclaim and publicly to apply is practically to discover) was reserved for our brethren beyond the Atlantic. The safety as well as the efficacy of this application of the vapour of ether or of chloroform or (perhaps I may add) amylene, has now been ascertained by abundant experience. And if we consider what it has done, and what it promises—the vast amount of torturing pain which already has been spared to thousands of our race, and which countless generations yet unborn may thus escape; and not the bodily anguish only, but the mental terrors of its prospect, and the agitating recollection of its endurance; and still further, the improved chance of ultimate well-doing which the avoidance of so severe a shock to the nervous system is believed to confer — we shall scarcely deem the proposal extravagant which has been made by one of our hospital physicians, that for so merciful a boon to suffering humanity, public thanksgiving should be humbly offered up to Heaven in our churches.

Here, as in many other instances, it is curious to note how closely a great discovery may be approached, and yet be missed. Long before its power was used to prevent the inflicted pain of surgical operations, the vapours of ether had been successfully employed to suppress the inbred sufferings of natural disease. A former patient of mine told me this story of herself. She had been sorely tried, in her earlier years, with paroxysms of urgent dyspnœa (difficulty of breathing), frequently recurring, and her life was thought to be in danger. After fruitless trials of various other remedies, the following method was adopted, with the happiest result, under the advice of a physician of high promise, who died young, Dr. Woolcombe of Plymouth:— About two teaspoonfuls of sulphuric ether were poured into a saucer, which was placed on her lap, and over which she breathed, as she sat gasping in bed, with a shawl thrown over her head to prevent the escape of the vapour. Very soon a delightful sensation of tranquillity ensued: she felt (I quote her own words) "as if going to heaven in the most heavenly way," and presently she sank back unconscious. As soon as this happened, her husband, the late distinguished Admiral of the Fleet, Sir T. Byam Martin, by whom the process was managed, withdrew the shawl, and in a short time Lady Martin gradually recovered, breathing calmly. This mode of quieting her attacks of asthma was begun in 1846, a few years after the publication of Sir Humphrey Davy's hint; and it was repeated again and again, sometimes twice in the same day, for a very considerable period. Lady Martin survived the prediction of her speedy death for forty-three years.

DICKSONIANA:

A SERIES OF ARTICLES FROM DR. DICKSON'S WORKS.

(*Continued from page* 341.)

More than twenty-three centuries have elapsed since Hippocrates distinctly announced the unity of diseased action, saying, "THE TYPE OF ALL DISEASE IS ONE AND IDENTICAL." These are his words; and that is my case. That is the cause I am prepared to enter upon, with as perfect a chain of positive and circumstantial proof in its support as ever was offered to human investigation. What Johnson said of the poets is equally applicable to the physicians: "The first, whoever they may be, must take their sentiments and descriptions immediately from knowledge; their descriptions are verified by every eye, and their sentiments acknowledged by every breast. Those whom their fame invites to the same studies, copy, partly them and partly nature, till the books of one age gain such *authority* as to stand in the place of nature to another." It is in this manner that the descriptions of disease in our nosological systems have become a mere tissue of unnatural division, not to say of the most obvious contradiction, if the words in which they be conveyed have, in many instances, any meaning at all. What, then, shall we say of reasoning founded upon facts which are not facts—upon mere assumptions which have no foundation in nature?

The schools of Egypt and Arabia, the eminent men of Greece and Rome, the great anatomical teachers and philosophers of the middle ages, knew not the circulation of the blood. How wild were their

theories, how fanciful their hypotheses, may be gleaned from the fact of their naming certain blood-vessels *arteries* or *air-vessels;* tubes which you have only to wound, to see them pour out the living current in jets, were for ages supposed to contain, not blood, but air! What innumerable fallacies must have entered into reasoning founded on such premises! Yet it was not till the seventeenth century that the illustrious Harvey demonstrated the true nature of the arteries, and the manner in which the blood circulates through the body. The more immediate reward of his discovery was calumny, misrepresentation and loss of his professional practice. The same college of physicians who, in after years, opposed the improvements of Montague and Jenner, made the circulation of the blood the subject of their bitterest satire. Not content with slandering the character of its discoverer, the more vile and venal of his medical brethren, made it a pretext for declining to meet him in consultation. Harvey lived, nevertheless, to neutralise the malice of his enemies. He became successively the physician of the first two English kings of the Stuart race, James and Charles.

The more you can explain and facilitate the attainment of any science, the more you will find that science approach perfection. The true philosopher has always studied to find out relations and resemblances in nature, thus simplifying the apparently wonderful. The schools, on the contrary, have as invariably endeavoured to draw fine-spun distinctions and differences, the more effectually to perplex and make the most simple things difficult of access. Any exposition of the singleness of principle which pervades a particular science, will be sure to meet the censure of schools and colleges. Nor will their disciples always forgive you for making that easy, which they themselves, after years of study, have declared to be incomprehensible.

The most perfect system has ever been allowed to be that which can reconcile and bring together the greatest number of facts that come within the sphere of the subject of it. In this consists the sole glory of Newton, whose discovery rests upon no higher order of proof. How was this discovery received on its first announcement? Why authority scowled upon it, and taste was disgusted with it, and fashion was ashamed of it, and all the beauteous speculation of former days was cruelly broken up by this new announcement of the better philosophy, and scattered like the fragments of an aerial vision over which the past generations of the world had been slumbering their profound and pleasing revery. For upwards of ten centuries had the false philosophy of Aristotle enslaved the minds of civilised Europe, thus, at last, to perish and pass away; so that time itself is no sure test of a doctrine, nor ages of ignorance any standard by which to measure a system. To nature, eternal nature, must truth ever make her first and last appeal. By this, and this only, am I willing that the new fabric of medicine which I have presumed to erect upon the ruins and reveries of the past should be tested and tried. Till the world shall detect one real, one indubitable fact militating against the views I am now about to develop, let not innovation be charged against me as a crime. Hippocrates, Galen, Boerhaave, were all innovators in their day, nay, revolutioners in physic.

In the higher powers of observation, comparison, comprehension and direction, termed *mind* or *intellect*, man stands preeminent above all animals; in so far as regards the more immediate observation of certain things around him, he is, nevertheless, excelled in some respects by many. The eagle has a finer and farther sight; the hearing of the mole is more acute; the dog and the vulture distinguish odours wholly inappreciable by him; not a few of the wilder denizens of the forest have even a keener sense of taste and touch. In mere perceptive power, then, the beasts of the field are in some things permitted to surpass us, while the sagacity of the elephant and the dog, the courage and emulation of the horse, the foresight of the ant, the cunning of the fox, and the social and building habits of the beaver, declare to us, however unpleasing the announcement, that others of God's creatures besides ourselves possess the elements at least of that REASON upon which we so highly pride ourselves. To

the greater degree of complexity (perhaps, I should rather say *completeness)* of his CEREBRAL organisation, to his more perfect development of that source of all reasoning power, the BRAIN, man assuredly owes this corresponding increase in the number and force of his reasoning faculties.

HOW TO NURSE SICK CHILDREN.

(Continued from page 353.)

YOU see, then, in some circumstances, a symptom which you might suppose to be of but little moment may, in reality, be of great importance; that the presence or absence of sickness may tell a great deal about the presence or absence of disease of the brain. But there is another symptom of disorder of the brain so serious that you are not likely ever to overlook it, but concerning which I will say a few words, to prevent you, if possible, from being too much alarmed at its occurrence, and from speaking and acting as if it left but very little hope of a child's recovery. I do not doubt but that you have seen a baby in fits, and a very sad sight it is indeed: the pretty little face all distorted and livid; the eyes rolling or squinting frightfully; the hands clenched; the arms bent; the legs drawn up; the body arched backwards and all the limbs twitching violently; while the child is insensible and cannot see, cannot swallow, cannot move of its own accord; at length in a minute, or five or ten minutes, or an hour, or more, the fit ceases, sometimes by degrees, sometimes all at once; the child fetching a deep sigh and then lying quiet and pale, with all its limbs relaxed, as if in a faint, from which it passes into sleep and some hours after seems pretty well; or it may be, when the fit subsides and the limbs become relaxed, all the muscles of the body have been so tired out by their violent movements, that they can work no more for the present; the heart stands still; the chest is not raised to draw in air again into the lungs, and the baby dies—dies, not because any part has been spoilt for its work, but because the whole frame is exhausted, and its movements stand still, just as a watch stops for want of winding up. Sometimes a fit comes on from a sudden cause and kills a baby that seemed before quite well; sometimes the child has been long ailing, and while thus out of health, has fits daily, or several times a day, for weeks together: sometimes fits occur with violence, and after having recurred two or three times in a single day, you find that measles or scarlet fever has come on, and from the outbreak of the rash, the fits quite cease. At other times after long illness, fits come on when the child is very weak, and their occurrence is soon followed by death; or, again, after the signs of disorder of the brain have been present for days, convulsions occur, and are followed by very marked worsening of the child's condition, who becomes more stupid than before or swallows less well, or loses the power over one limb or one side of the body, and usually dies before many days more have passed. Now all these various circumstances in which fits take place in early life, and the various conditions which follow their occurrence, show plainly enough that the meaning, so to say, of a fit is very different in different cases. A fit shows that the brain has been disturbed in the quiet performance of its duties, but, taken alone, it shows nothing more. The disturbance may depend on some sudden fright which the child had, and then it will most likely soon pass away, and when the fit is over, the danger will be over too; or it may depend on the teeth pressing against the gums, and causing pain, so much pain, that at last it disorders the brain, and the baby has a fit. If the fits come on at the end of a long illness, they show that the brain, in common with all other parts, is disordered, and that disorder of the brain shows itself by fits, just as disorder of the lungs shows itself by cough, or rapid breathing; while if they come on in the course of some disease of the brain itself, they are a proof that the disease is advancing, that the child is growing worse instead of better.

Time and attention will bring experience with them, and you will learn by degrees to distinguish the meaning of fits, in different children, and in different circumstances. What I wish now to impress upon you is, that the meaning differs widely in different cases, and that you

judge of it by the nature of the symptoms which have gone before, and of those which have come after the fit, as well as by the character of the fit itself. Now when a fit depends upon some disease which has been going on in the brain, it generally happens that both sides of the body are not equally affected by it, but that one leg and arm, or perhaps one arm alone, is twitching and struggling, while the other side of the body remains quite still, or is disturbed much less, being affected after the other, and the movements of that side of the body ceasing sooner. After the fit is over, too, the side which was most affected is always comparatively useless, or even altogether powerless; the limbs, however, not being supple and easily bent in all directions, but the joints being contracted; the arm, for instance, stiffly bent, and the fingers drawn into the palm of the hand. Now symptoms such as these always show the character of a fit to be more serious, its causes to be less capable of cure, than when it affects both sides equally, when it leaves both sides unpalsied, and the limbs uncontracted, and when consciousness returns immediately or speedily after the fit has ceased. Fits, however, do not often occur at an early period of any disease of the brain, but usually take place after other symptoms have shown themselves, for many days, such as might cause you to fear what the nature of the disorder is. Fretfulness, with drowsiness, and yet with unquiet, uneasy sleep, dislike to the light, not shown, perhaps, by actual complaints, but by the half-shut eyes, and the face turned from the window, are some of the earliest signs, which, even with slight attention, will attract your notice. Headache, and heat of head, or dizziness, which makes the child stumble as it walks, or cry in alarm if moved from one person's arms to those of another, may also be observed; and when, with these signs, there are sickness and vomiting, and a confined state of the bowels, these are all evidences of disease of the head, which will leave little doubt, should a fit afterwards occur, but that it is the proof of incurable mischief having been done.

As disease of the brain goes on, the child will sleep more, perhaps still uneasily, or it may be a deep, sound sleep, which seems as if it must be a great blessing to the suffering little one; but, if you watch it, you will find that from this sleep the awaking is imperfect, the eyes are opened drowsily, and the large, dark pupil of the eye is grown to twice the size it used to be, and becomes no smaller, or very little smaller, when light is let into the room. Now and then, too, there is a slight cast in the eye, or it may be a constant squint, or even, if not, the child sometimes appears to see, and then you doubt, a few hours after, whether its sight is not altogether gone; and a fit comes on now, or perhaps having occurred before, comes on again, and tells the doctor, and tells you too, if you have watched the child intelligently, that there is no room for hope now, that mischief has been done beyond the power of medicine to cure; that life is drawing to an end, that consciousness will not come back here, but that when the babe wakes up it will be in that happy place where it will have no more pain, no more crying, and to which, in a few short years, it will welcome you, if, having done your duty to it in the days of its suffering, you may be found worthy to hear from your Saviour's lips the blessing: "Inasmuch as you did it to the least one of these, you did it unto me."

I have said thus much about convulsions in children, in order that you may understand thoroughly why it is that they are not always to be treated in the same way; why sometimes they are not to be treated at all, but that, sad as they are to be looked upon, it may, in some instances, show the doctor's wisdom, when he says to you, "If fits should come on, you must do nothing." On the sudden and unexpected occurrence of a fit, indeed, in a child previously healthy, or who had not long been ailing, you may, with safety, and often with benefit, place the child in a hot bath, while at the same time you dash cold water on its face, or pour cold water upon its head.

(To be continued.)

He has escaped somewhat of the smitings of this single-stick world, who, when he hears knuckles at his postern, can throw himself back in his chair, like a king upon his throne, and without a qualm of the heart, cry—"Come in!"

PICTORIAL ILLUSTRATIONS OF MEDICAL BOTANY.

WAKEROBIN (Arum Maculatum.)

Description.—This is a perennial plant. The leaves appear early in the spring, are of a deep green, spotted with purple, irregular spots, and halberd-shaped; at the bottom of the leaf-stalks are sheaths which are of a pink colour. The inside of the calyx is of a lighter green. The club, inside, is of a pinky-purple. The root is of a light-brownish yellow, about the size of a nutmeg, sending forth a great number of single fibres.

It flowers in April and May.

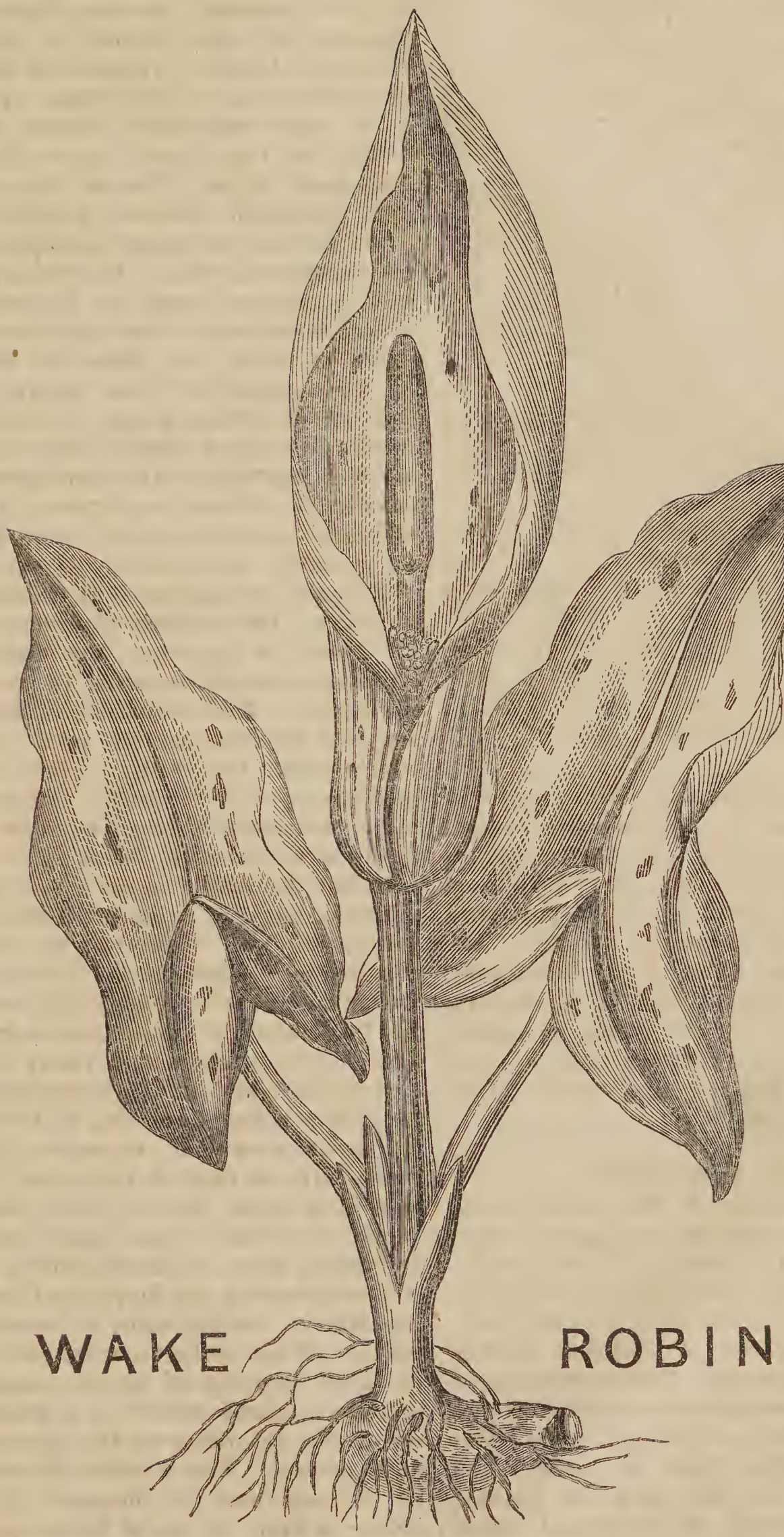
It is very common throughout England on hedge-banks, and in groves and thickets.

To colour this plant.—For the leaves, gamboge and Prussian blue, and for light part of calyx, make a light wash by adding water to the former; root, burnt umber, made light with water, purple, lake and Prussian blue, more lake to make it pinky; the sheath, at bottom of leaf-stalks, a wash of light lake.

Medicinal qualities.—It is a powerful stimulant when in a green state, much of which property is lost by evaporation. It is good for coughs and debilitated stomachs. The root should be powdered and taken in honey or preserve. In order to obtain more of its stimulating properties, it may be used as a conserve, by mixing half a pound of the green root with a pound and a half of good sugar beaten well up in a mortar. One teaspoonful for a dose.

ON DIABETES.

When the amount of urine secreted and passed is permanently too great, when it is constantly running off, as it were, from the system, the patient is commonly said to have *diabetes;* but it is not every case of excessive flow of urine that deserves to be called diabetes. Great quantities of aqueous fluid are passed by hysterical and nervous patients; we all make more water in cold weather than in warm; the functions of the skin and the kidney, compensating each the occasional defect of the other. Certain medicines and articles of diet, are also well known to cause a temporary excess in the amount of urine secreted. In fact, although the quantity of urine voided is the most obvious and striking symptom of diabetes, its definite and characteristic symptom is a most remarkable change in the quality of that liquid, in its becoming loaded with sugar. You will find, indeed, two species of diabetes mentioned by many authors, the diabetes *insipidus*, and the diabetes *mellitus*. The former term, in our opinion, ought to be abolished. If it refer merely to an unnatural abundance of urine, not otherwise differing in its composition from healthy urine than in containing a large proportion of water, by calling such a state diabetes, we link together in the same genus two essentially different conditions. In true diabetes, the urine is never without sugar, the quantity may, indeed, be small, and it may not be sensible to that coarse test the *taste;* but modern observers almost all agree in rejecting any species of diabetes in which the urine is not at all saccharine. This condition of the urine was first described in 1684 by our learned countryman Dr. Willis. The sensible qualities of diabetic urine differ strikingly, in many particulars, from those of the urine in health; its chemical qualities differ strikingly too, as I have already told you, but it is in one particular only. Fortunately no extraordinary skill is required to recognise the morbid secretion. Diabetic urine is commonly light-coloured and transparent, of a pale straw or greenish tint. Being so copious, it rarely exhibits any visible *lithates* (stony matters). Its odour is peculiar; according to Dr. Prout, the scent somewhat resembles that of sweet hay, or that of milk, but to our nose it is more like the faint smell of apples, or rather of an apple chamber; its taste is more or less decidedly sweet. Notwithstanding its limpid and aqueous appearance, diabetic urine is remarkably heavy. When boiled in a test-tube with an equal quantity of liquor potassæ, it assumes a claret colour of a greater or less depth, according to the quantity of sugar present. This is called *Moore's* test. Its delicacy may be increased by first adding a drop or two of liquor potassæ to the urine, so as to make it slightly alkaline, and then decolourising it by



WAKE ROBIN

the further addition of animal charcoal, and by filtration through paper.

Yest, again, furnishes a ready and an easy test of saccharine urine. Invert a test-tube filled with urine, to which a small quantity of yest has been added, into a saucer also containing urine. In a warm room, fermentation, if sugar be present, will soon commence, and carbonic acid rising in the tube will depress the upper surface of the urine. It was long believed that the quantity of urea in diabetic urine was reduced much below the natural standard, and that the sugar was somehow formed at the expense of the urea. Dr. Prout, in his earlier researches, always detected a little, and but a little, of this peculiar principle. Later observations have shown, however, that the urea is not so scanty; nay, that it is generally as abundant as in the urine of health, and sometimes even more so. The presence of the sugar conceals the urea—interferes with the action of the ordinary tests of that substance. By certain modes of procedure, which we need not stop to describe, the urea may readily be discovered, and it is often found to be rather excessive than deficient. The usual saline matters belonging to healthy urine are present also in that of diabetic persons, and in the same relative proportions; but, as might be expected, their absolute amount, in a given quantity of the liquid, is very much diminished. In short, the only essential deviation from the standard chemical constitution of the urine is, that it holds in solution a quantity of sugar. This explains its peculiar odour, its sweetness, and perhaps its excessive quantity. It accounts also for another very characteristic property of diabetic urine: I mean its high specific gravity. In general, you know, the specific gravity of the urine is inversely proportional to the quantity secreted in a given time; the more copious and dilute it is, the lighter it is. But in diabetes, so strong is the saccharine impregnation, that the specific gravity more than keeps pace with the increased quantity of the liquid secreted. The specific gravity of diabetic urine is always much higher than that of healthy urine.

The quantity of urine secreted and voided is sometimes enormous, far more than could be supplied by the quantity of fluid taken as drink, although that, as shall be presently explained, is excessive too. A healthy person passes from one to three or four pints of urine in twenty-four hours; the quantity, however, is liable to considerable variation, perhaps the average may be safely laid at about forty ounces, but patients in diabetes will void forty pints in the same time. I have myself known twenty-six; thirteen or fourteen are not uncommon; and cases are recorded, by writers of credit and veracity, in which seventy pints were passed daily. Nay, one Italian author declares that two hundred pints have been discharged in that time.

The saccharine matter thus held in solution may be obtained in its solid form by evaporating the urine. I have seen large flat cakes of beautifully crystallised diabetic sugar. It differs somewhat from common sugar, the produce of the sugar-cane, and approaches more nearly to the sugar of grapes. This kind of sugar, which may also be produced artificially from starch, chemists have named *glucose*. By rapid evaporation of the water, a thick sirup is procured, resembling treacle; but Dr. M'Intyre, who has presented to an hospital museum some very perfect specimens of this sugar, prepared by Mr. Blandford, informs me, that to get it well crystallised, the evaporation in a steam-bath should be stopped while the urine is still of thin consistence. It may be quickly reduced to one half, perhaps, of its original quantity. Then it should be set aside in shallow plates, and in the course of ten days or a fortnight the sugar will be deposited in an irregularly crystalline mass.

(To be continued.)

THE CASE OF SMETHURST.

ASTOUNDING CIRCUMSTANCES AND ADMISSIONS RELATIVE TO THE LEGALLY QUALIFIED FACULTY.

We give the following from the *Times* of Thursday, November 17th:—

The following is a copy of a letter addressed by the Right Honorable Sir G. C. Lewis to the Lord Chief Baron, communicating the grant of a free pardon to Smethurst, so far as the alleged murder of Isabella Banks is concerned:—

Whitehall, Nov. 15, 1859.

"My Lord,—I have the honour to acknowledge the receipt of your Lordship's further report of the 18th ult., on the case of Thomas Smethurst, who was convicted at the Central Criminal Court in August last of murder, and sentenced to death.

"As your Lordship suggests in that report that reference should be made to the judgment of medical and scientific persons selected by the Secretary of State, for the purpose of considering the symptoms and appearances of the deceased Isabella Banks, and the result of the analysis, I have sent the evidence, your Lordship's reports, and all the papers bearing upon the medical points of the case, to Sir Benjamin Brodie, from whom I have received a letter, of which I enclose you a copy, and who is of opinion that, although the facts are full of suspicion against Smethurst, there is not absolute and complete evidence of his guilt.

"After a very careful and anxious consideration of all the facts of this very peculiar case, I have come to the conclusion, that there is sufficient doubt of the prisoner's guilt to render it my duty to advise the grant to him of a free pardon, which will be restricted to the particular offence of which he stands convicted; it being my intention to institute a prosecution against him for bigamy.

"The necessity which I have felt for advising Her Majesty to grant a free pardon in this case has not, as it appears to me, arisen from any defect in the constitution or proceedings of our criminal tribunals. It has arisen from the imperfection of medical science, and from the fallibility of judgment, in an obscure malady, even of skilful and experienced medical practitioners.

"I have, &c.,

"G. C. LEWIS.

"The Lord Chief Baron, &c."

If there be any one thing required beyond what Dr. COFFIN has written, or spoken from the rostrum, beyond what Byron has said, Dickson, in his "Fallacies of the Faculty," has stated, and medical men of the highest standing in their profession have been obliged to confess,* it is the union of the admissions and assertions contained in the above article, and its concluding quotation, emanating from the Right Honorable Sir George C. Lewis, Bart, M.P., and present Secretary for the Home Department, the weight of whose opinion, from his known talents, must be allowed to be great and preponderating, who plainly states that "the necessity he has felt for advising Her Majesty to grant a free pardon arises from the IMPERFECTION OF MEDICAL SCIENCE, and from the FALLIBILITY OF JUDGMENT in an obscure malady, even of *skilful* and *experienced* MEDICAL PRACTITIONERS. What an assertion for one in authority, nay, in the highest authority, to be compelled to make!!

"Tell it not in Gath, publish it not in the streets of Askalon. How are the mighty fallen!"

But we will tell it in London to all we are in connexion with, and publish it to the world, that the Right Honorable Home Secretary has given the weight of his testimony in corroboration of all that Dr. COFFIN, Dr. Dickson, and a host of others have written, upon the imperfection of medical science, as professed and practised by far the greater majority of medical men of the highest grade and greatest skill, and has declared the fallibility of their judgment. Shades of Harvey, Montague, Jenner, descend! and if anything can add to your happiness it must be this; and were we converts to the Machiavelian doctrine that the end justifies the means,

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* Dr. Waterhouse states, "I am disgusted with learned quackery." Dr. Baillie writes, "I have no faith in physic, and I wish I could be sure I have not killed more than I have cured." The learned Dr. Johnson declared it to be his most conscientious opinion, that if there were not a single physician, surgeon, apothecary man-midwife, chemist, druggist or drug in the world, there would be less mortality among mankind than there is now. The illustrious Frank honestly declares that thousands are annually slaughtered in the quiet sickroom. And all these, and a host of others, are living facts to this day; for, in 1850, Sir Benjamin Brodie completely abandoned every one of the more prominent measures on which he had, for upwards of *thirty* years, very particularly plumed himself.* What an incredible amount of suffering must he have caused his fellow creatures during those thirty years of wrong practice.

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* See Dr. Dickson's "Destructive Art of Healing," page 12.

Smethurst deserves indeed a free pardon, for his case is the cause of the high corroboration of all that the medical dissenters have written upon the imperfection of medical science and fallibility of its diplomatised registered practitioners. By the by, may we enquire what the Right Honorable Home Secretary thought, or what was his opinion, when he voted in favour of the late Medical Bill, that concocted abortion of the learning, common sense, and erudition of its promoters and supporters? Has he recently become a convert to the generally unerring laws of nature and her health-bestowing herbaceous medicines? If so, he has added a fresh chaplet to his brow, which will bloom when all the others fade, and we, as fellow creatures, most heartily applaud him.

And now, ye medical men, both of the highest standing and of the latest diplomatising and registering—those who have and do support the shameful monopoly of administering medicines, and deem it right and proper to give mercury, arsenic, iodine, antimony, and other death-dealing substances, to cure and eradicate disease, with what success let a Baillie, a Johnson, a Frank, &c., &c., teach you, as well as a reference to your own experience in allopathic treatment—ye that, in the hopes of perpetuating this monopoly, supported the late iniquitous and restrictive Bill—what does all your science amount to?—imperfection! What have your skill and experience taught you?—fallibility. And notwithstanding days, months, years having been spent in scientific research, how much nearer are you in the absolute curing of disease than your learned body were in the time when the long pole of the barber-surgeon graced the door of the medical practitioner? We answer, No nearer. Ye have placed yourselves upon the same footing as the dog in the fable of "the dog and the manger," with which we are all so familiar: he could not eat the hay himself, nor would he let the ox eat it. Ye fail to cure disease, nor will ye, if possible, allow others to do it. Ye have discarded the sanatory, life-giving herbs of the field for the productions of the crucible; ye have subjected every part of the human frame to microscopic investigation; ye have analysed, and re-analysed, and what has been and is the result of all your labours as to the cure of disease?—uncertainty, imperfection, and fallibility. If indefatigable exertions, learning and laborious investigation ensure success, ye deserve it. The only prevention was and is, that ye took the wrong path, and thus missed it; whilst we, the practitioners of Dr. Coffin's Medico-Botanic system of medicine have flown to Nature and common sense to guide our practice. And what have been the results? Why, cures upon cures, even when ye have given up the cases as hopeless.

Now, a few words to our readers and the public in general. Physicians, surgeons and registered medical men, being sanctioned by government, have thereby obtained a certain position, and the public, who very rarely think for themselves, take for granted whatever fallacious observations, advice and directions made and given by them as correct and true. The majority of the public are grossly ignorant of the conformation of the human body; they have not the least knowledge of anatomy or physiology, consequently, anything said by a young or ignorant diplomatised practitioner is assented to by those more ignorant than himself. We, therefore, in conclusion, most earnestly advise every one to become generally acquainted with the structure of the bodily fabric, its several organs, and the functions they perform; and study the qualities and virtues of those herbal remedies so liberally furnished by nature, concocted, not in the crucible of the chemist, but in her great laboratory, and ready to your hands, wherewith you may safely prescribe for and cure yourselves without calling in the aid or advice of diplomatised imperfection and fallibility.

FORMATION AND GROWTH OF BONES.

(Continued from page 246.)

We have further to understand, that if there be any doubt of the sensibility of a bone, it is only when it is in health; for when inflamed, it becomes exquisitely sensible. When the texture of a bone is loosened by inflammation, its feeling is roused; and the hidden sensibility of the bone rises up like a new property of its nature: and as the eye, the skin, and all feel-

ing parts, have their sensibility increased by disease, the bones, ligaments, bursæ, and all the parts whose feeling, during health, is obscure and hardly known, are roused to a degree of sensibility far surpassing the soft parts. The wound of a joint is indeed less painful at first, but when the inflammation comes, its sensibility is raised to a dreadful degree; the patient crying out with anguish. No pains are equal to those which belong to the bones and joints.

Ossification is a process which, at first, appears so rapid, that we should expect it to be soon complete; but it becomes in the end a slow and difficult process. It is rapid at first; it advances slowly after birth; it is not completed till the twentieth year; it is forwarded by health and strength, retarded by weakness and disease. In scrofula it is imperfect, because there is an imperfect assimilation of food, and the earth of bone is not furnished or not secreted into the bone; and so children become rickety, when the bones soften and swell at their heads, and bend under the weight of the body. And why should we be surprised, that carelessness of food or clothing, bad air, or languid health, should cause that dreadful disease, when more or less heat, during the incubation of a chick, prevents the growth of its bones; when the sickness of a creature, during our experiments, protracts the growth of callus; when, in the accidents of pregnancy, of profuse suppuration, or of languid health, the knitting of broken bones is delayed, or prevented quite?

This process, so difficult and slow, is assisted by every provision of nature. The progress of the whole is slow, that so long as the body increases in stature, the bones also may grow; but it is assisted in the individual parts, where some are slow, some rapid in their growth, some delayed, as the heads of joints, that their bones may be allowed to extend, and others hastened, as the pelvis, that it may acquire its perfect size early in life. Ossification is assisted by the softness of the cartilaginous bed in which the bone is formed; by those large and permeable vessels which carry easily the grosser parts of the blood; by a quick and powerful absorption, which all along is modelling the bone; and, most of all, by being formed in detached points, multiplied and crowded together, wherever much bone is required.

We have understood that the bones of the head have membranes as their substitutes, as the long bones have cartilage. The ossification, for example, of the frontal or parietal bone begins in a point; a few delicate meshes of bony matter are formed in the interstices of the membrane. The membrane is by this means split into two other membranes we afterwards recognise under the names of pericranium and dura mater.

It is in the bones of the skull that ossification goes from one or more central points, and the radiated fibres meet the radii of other ossifying points, or meet the edges of the next bone. The thick round bones which form the wrist and foot have one ossification in their centre, which is bounded by cartilage all round. The processes are often distinct ossifications joined to the bones, like their heads, and slowly consolidated with them into firm bones.

In the original cartilage of the long bones, there is no hollow, nor cavity; it is all one solid mass. When the ossification first appears, the cavity of the bone also begins, and extends with the ossification: at first the cavity is confined chiefly to the middle of the bone, and extends very slowly towards the ends. This cavity, in the centre of the bone, is at first smooth, covered with an internal membrane, containing the trunks and branchings of the nutritious vessels, which enter by a great hole, in the middle of the bone; and the cavity is traversed with divisions of its lining membrane, which, like a net-work of partitions, conduct its branches to all parts of the internal surface of the bone; and its nets, or meshes, are filled with a reddish and serous fluid in the young bone, but secrete and contain a perfect marrow in the adult bone.

The whole substance of a bone is not only fibrous, as appears outwardly, but is truly lamellated, consisting of many distinct and delicate plates of bone, which lie over each other, in regular order, and might suggest the notion of successive ossification of the periosteum forming the bone. These lamellæ, or plates, are more condensed and firm towards the outer surface, and are more loose, separate, and

spongy towards the internal surface of the bone; and it is easily seen, during the growth of a young bone, that the inner and more delicate plates are separating from the walls of the bone, and receding towards its cavity: and these plates, being again crossed by small bony partitions, form a net-work, or spongy mass, which fills the whole cavity of the bone. In the middle of the bone, the cavity is small, the walls thick, and having all their bony plates, the cells of net-work few and large; but towards the ends, the bones swell out, the cavity also is large; but it is not like that in the middle, a large tubular cavity; it is so crossed with lattice-work, with small interstices and cells, that it seems all one spongy mass of bone: and so many of the inner layers are separated, to form this profusion of cells, that the whole substance of the bone has degenerated into this lattice-work, leaving only a thin outward shell. This reticular form is what anatomists call the cancelli, lattice-work, net-work or alveolar part of the bone: it is all lined with one delicate membrane, and inward partitions of the same lining membrane cover each division of the lattice-work, forming each cell into a distinct cavity. In these cavities, or cells, the marrow is secreted. The secretion is thin and bloody in children; it thickens as we advance in years; it is a dense oil or marrow in the adult. The marrow is firmer, and more perfect in the middle of the bone, and more thin and serous towards the spongy ends. The whole mass, when shaken out of the bone, is like a bunch of grapes, each hanging by its stalk. The globules, when seen with the microscope, are neat, round, and white, resembling small pearls, and each stalk is seen to be a small artery, which comes along the membrane of the cancelli, spreads its branches beautifully on the surface of the bag, and serves to secrete the marrow, each small twig of artery filling its peculiar cell. To this an old anatomist added, that they had their contractile power, like the urinary bladder, for expelling their contents; that they squeezed their marrow, by channels of communication, through and among the bony layers; and that their oil exuded into the joint, by nearly the same mechanism by which it got into the substance of the bone, which is now known to be pure fancy, and to have no foundation.

While the constitution of a bone was not at all understood, anatomists noted with particular care every trifling peculiarity in the forms or connections of its parts; and these lamellæ attracted particular notice. Malpighi had first observed the lamellated structure of bones, likening them to the leaves of a book. Gagliardi, who, like Hippocrates, went among the burial places of the city, to observe the bones there, found in a tomb, where the bones had been long exposed, a skull, the os frontis of which he could dissect into many layers, with the point of a pin. He afterwards found various bones, from all parts of the body, thus decomposed; and he added to the doctrine of plates, that they were held together by minute processes, which, going from plate to plate, performed the offices of nails: these appeared to his imagination to be of four kinds—straight and inclined nails, crooked or hook-like, and some with small round heads, of the forms of bolts or pins.

Another notable discovery was the use of the holes, which are very easily seen through the substance of bones, and among their plates. They are, indeed, no more than the ways by which the vessels pass into the bones; but the older anatomists imagined them to be still more important, allowing the matter to transude through all the substance of the bone, and keep it soft. Now this notion of lubricating the earthy parts of a bone, like the common talk of fomentations to the internal parts of the body, is very mechanical, and very ignorant; for the internal parts of the body are both hot and moist of themselves, and neither heat nor moisture can reach them from without: the bone is already fully watered with arteries; it is moist in itself and cannot be further moistened nor lubricated, unless by a fuller and quicker circulation of its blood. It must be preserved by that moisture only which exists in its substance, and must depend for its consistence upon its own constitution; upon the due mixing up of its membrane, cartilage, and earth. Every part is preserved in its due consistence by the vessels which supply it; and I should no more suppose fat necessary for preserving the moistness of a bone, than for

preventing brittleness in the eye. This marrow is, perhaps, more an accidental deposition than we, at first sight, believe. We indeed find it in such a regularity of structure as seems to indicate some very particular use; but we find the same structure exactly in the common fat of the body. When, as we advance in years, more fat is deposited in the omentum, or round the heart, we cannot entertain the absurd notion of fat being needed in our old age, to lubricate the bowels or the heart; no more is the marrow (which is not found in the child) accumulated in old age, for preventing brittleness of the bones.

(To be continued.)

DR. COFFIN'S BOTANICAL JOURNAL.

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FASHION.—Gentility running away from vulgarity, and being afraid of being overtaken by it—a pretty sure sign the two are not very far asunder. - *Hazlitt.*

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"Human experience, which is constantly contradicting theory, is the great test of truth."—Dr. Johnson.

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THE GLEANER, No. 48.

ON THE SYMPTOMS OF DISEASE.

Besides pain in all its modifications, there are many other and very interesting uneasy sensations. Itching is an uneasy sensation nearly allied to pain. As severe mechanical irritation will cause pain, so a slighter degree of it will cause itching. Itching occurs in many cutaneous diseases, and it gives a name to one of them, which is called emphatically *the itch;* and the Latin word signifying the same sensation, *prurigo*, is made use of to denote other forms of disease of which itching is the most prominent symptom. It often affects some one of the natural outlets of the body. It occurs about the rectum from the motions of little worms that nestle in its lower part. Thus prurigo podicis, which does not always depend upon the cause just mentioned, and the prurigo pudendi in the female, are sometimes most distressing complaints, harassing the patients continually, preventing sleep, excluding them from society and requiring medical treatment. Acrid matter in the intestines will sometimes produce a kind of itching there; and the call to void the fæces is, perhaps, more akin to itching than to any other sensation; sometimes, indeed, it amounts to pain. The tickling often felt in the windpipe and provocative of cough, appears to be of the same nature. Tingling and pricking are sensations which have also some analogy with *itching.*

Nausea is another uneasy sensation. It is sometimes a direct symptom of disease or disorder of the stomach, to which the sensation is referred. Sometimes it is a very important *indirect* symptom, taken in conjunction with others, in disease of some part at a distance from the stomach—in the kidney for example, or in the brain. The nausea which is so troublesome to pregnant women, is another instance of a diseased sensation sympathetic of some change in a distant organ.

Another example of an uneasy sensation we have in *giddiness* or *dizziness,* technically *vertigo.* It sometimes results from disease within the head; sometimes it is an indirect consequence of disorder of the stomach, or of mere debility and an approach to syncope.

Patients will also complain of an undefinable sensation which they usually call sinking, a sensation which is referred to the epigastric region. This is frequently a source of much distress to hysterical women; and it is occasionally the forerunner of death at the close of severe diseases which have a tendency to end fatally, in the way of syncope.

Many others might be adduced, and in the majority of diseases the appetite is lost or impaired; but sometimes excessive hunger accompanies and denotes disease. We occasionally derive the first suspicion of the existence of diabetes from the preternatural keenness of the appetite. Thirst is a very constant and striking symptom in all febrile and inflammatory disorders, and in the disease just now mentioned, diabetes, it frequently constitutes the whole distress of which the patient is sensible. The appetite may be perverted, as well as deficient or excessive. Chlorotic girls will eat cinders, eggshells,

sealingwax, slate-pencil and such trash. So women who are pregnant either have or pretend to have inordinate longings for particular kinds of food—longings which are evidently fostered by encouragement. They are not, I believe, common at present in this country; and they are less frequently heard of among the poor, who have not the means of gratifying them, than in the higher ranks of society.

The class of uneasy sensations, you see, then, is a very large one, and some of the diseased feelings are of very great moment; however, there are not many diseases which consist altogether of uneasy sensations; and when we find that pain and uneasiness are complained of in any part or organ, we next proceed to inquire whether the functions of that part or organ are disturbed or suspended.

If we discover any interruption or derangement of function, we have additional reason for concluding that the part so affected in its sensations and in its functions is actually the seat of disease. This is an inquiry which we can prosecute with much less assistance from the *patient*, and mostly with no assistance at all, and even in spite of any erroneous opinions which he may have formed, and is anxious to state upon the subject. The study of disordered functions is of great practical value. The functions of the brain and nerves—of the heart and blood-vessels—of the respiratory apparatus, and of the digestive organs, are all of vital importance. Some of the impeded or disordered functions which relate to the brain and nerves are, in fact, identical with the last class of symptoms, and consist of altered or diseased sensations, sensations being one of the natural functions of those parts; depravations, for instance, of the sense of touch—numbness—the total absence of sensation which we call anæsthesia. Symptoms of this kind do not constitute primary diseases, but they often portend or accompany very serious alterations in the brain or in some part of the nervous system; and it is from that circumstance that they derive the greatest interest and importance which belong to them. The same may be said of perverted conditions of the other senses. The sense of vision is often impaired, and in various ways and degrees, from mere dimness or imperfection of sight to total blindness. And this total blindness may occur without any other *apparent* disease; the humours and fabric of the eye itself being in all evident respects healthy and right. It may come on, too, so gradually, and increase so slowly, as not to be perceived for a long time, even by the patient himself. Mr. Day, the great blacking man, who died not long since, was almost entirely blind. He told me he first discovered that the sight of one eye was gone, one day when he attempted to look at a distant object through a telescope. He could see nothing, and he imagined that the little brass plate which slides over the eye glass had not been withdrawn. There was, however, no such obstacle, and he too soon found that when the other eye alone was closed he was in total darkness. This state of blindness is called *amaurosis*, and it may result from pressure made upon the retina, or upon the optic nerves, or upon the brain at the origin of these nerves. There are other causes also to be mentioned hereafter of amaurosis. Its approach is sometimes marked by the fallacious appearance of black spots upon the objects the patient is looking at, or floating before him like flies or cobwebs in the air, *muscæ volitantes*.

(To be continued.)

HOW TO NURSE SICK CHILDREN.

(Continued from page 365.)

In the case of a sudden attack of fits, the hot bath, as we stated in our last number, may be tried; and whilst the child is in the bath, a large sponge, dipped in cold water, may be held on the head of the little sufferer. The hot bath will draw the blood towards the skin, and away from the overloaded brain: it will quiet the general disturbance; and if any fever, such as measles or scarlet fever, were brooding, it will very likely make the rash come out. Except in such circumstances, however, your wise course will be to wait for the doctor's instructions as to what to do, and not to act as though, because the warm bath is of use in some cases, it must be in all: the same remedy as, when rightly used, is of great service, when out of place will do much harm.

It is no part of my purpose to explain how every little thing is to be done which a nurse will have occasion to do in a sick-room; but as I have told you the chief things to *notice* when the brain is disordered, so I will briefly mention the chief things to which you must *attend*. The room must be kept *cool*, and *darkened*, and *quiet*. *Cool;* and this must be regulated by a thermometer: your feelings are not a sufficient guide: but if the thermometer, when hung out of a *draught*, and yet not *near* the fire, shows a heat or temperature of 55°, that will be a proper warmth for the room to be kept at. *Darkened*, not by shutting out completely both light and air with closed shutters, still less by drawing all the curtains round the bed, but by letting down the blinds so as to have a sort of twilight in the room, and by shading any light which by night may be burned in the apartment; while further you must observe so to place the child's cot, that, whether by day or night, his face shall be turned from the light, not directed towards it. *Quiet;* and this requires not only general quiet in the house, but quiet in the movements of every person in the house; speaking, not in a *whisper*, but in a low and gentle voice; walking carefully, but not on tip-toe, for there is a fussy, sham quietness, which disturbs the sick far more than the loudest noise.

In speaking *to* the child there must also be the same extreme gentleness; it must not be suddenly roused nor roughly awakened; but after being half aroused, by gently touching it, it may then be softly called to by name, or by some customary term of endearment, while it is always desirable that a face which it knows and loves should be the first to catch its eye on awaking. The same gentleness, too, must extend to every movement of the child, to turning it in bed, and so on. If it is necessary to raise it in order to give it food, the nurse must remember that its head aches, and that the little one is dizzy; the head must not be raised from the pillow, but the arm must be passed beneath the pillow, and the head raised while thus resting upon the pillow.

Quiet is disturbed, sometimes unavoidably, in order to give a child medicine; but much of the distress which is thus occasioned may generally be avoided by a little care and management. Medicines, such as would be needed by a child when very ill, can be given in the form of powder; and a small powder can be mixed with a little bread and milk, in such a manner as can be scarcely tasted. A little bread and milk can be put in a tea-spoon, and then on that the powder, which, without being stirred up with the contents of the spoon, should then be covered over with a little more, and may thus be swallowed almost unawares.

Most medicines for children are ordered by doctors as small in bulk and as little unpleasant as possible, but if, after persevering trials, you cannot succeed in administering what has been prescribed, without fighting and struggling with the little one, it is better to desist from the attempt till the doctor's next visit, rather than to throw a child, when seriously ill, especially if with some disease of the brain, into a state of furious excitement, by fruitless endeavours to administer remedies. The doctor will, at his visit, either alter the remedies, or, perhaps, direct you to persevere in their employment, even in spite of the child's resistance, though he is much more likely to do the former than the latter.

There are two things which are often attended by much and needless difficulty and distress in the case of children suffering from disease of the brain, namely, the application of leeches to the head (our system entirely ignores bleeding in any shape or form—Editor) and the employment of cold. Cold is best applied by means of a couple of bladders half filled with pounded ice and wrapped in two large napkins: one of them should be placed under the child's head, the corner of the napkin to be pinned to the pillow-case to prevent its being disturbed, while the other is allowed to rest upon the head, but with the corner of the napkin again pinned to the pillow, so as to take off the greater part of its weight. Thus arranged, the cold application will neither get displaced by the child's movements, nor will the child itself be wetted, as it too commonly is when wet cloths are employed for this purpose, nor irritated by their perpetual removal and renewal.

But I will now try to explain to you what things specially require your notice when disease is seated in the chest, though the points which you should observe are too evident to need that I should say much about them. The frequency of the child's breathing, the difficulty with which it is accomplished, the degree to which it is interrupted by coughing, and whether that cough is tight, or loose, or painful, are clearly enough the objects to which the doctor's inquiries will be directed, and to which, therefore, your chief attention must be paid.

As in cases of diseases of the brain, however, so here, there are not only certain things to notice, but also certain things to do. And, first, the temperature of the room requires particular care in all cases of inflammation of the lungs; for cold air would not only distress the child, and make its cough worse, but also most likely increase its disease.

(To be continued.)

ON DIABETES.

(Concluded from page 367.)

So much fluid being evacuated from the body through this channel, it might be expected that the other *channels* for the excretion of liquid matters would be comparatively dry: and so they are. The skin is dry, harsh and unperspirable. The patients tell you they never sweat—that they cannot get into a perspiration. This is a very general symptom; yet, in some few patients, especially as the fatal period of the complaint draws near, the surface readily becomes humid; and a friend and patient of mine, whose urine was very copious, and contained a notable amount of sugar for several years together, without any perceptible abatement, however, of his general good health, perspired profusely every night. Again, the bowels are mostly costive, and the fæces remarkably solid, and free from moisture. The tongue is dry, parched and sticky, sometimes unnaturally red and clean, and the waste of watery particles from the system seems to be felt and expressed by the inordinate thirst which the patients suffer. Their drought is often insatiable. The appetite for food is often, but not always, ua lly keen; and the patients, especially those in the lower ranks of society, are apt to think, while wondering at their loss of strength, that there cannot be much the matter with them, since they continue to eat and drink so famously.

Again, the enormous daily drain upon the system may be expected to cause various symptoms and sensations, which may all be referred to weakness and defective nutrition. A table has been published by Dr. Henry, showing the quantity of solid extract in every wine-pint of urine, of different specific gravities, from 1,020 to 1,050. Taking 1,040 as the average specific gravity, and ten pints as the average quantity, of urine discharged daily, the patient would in this manner lose, every twenty-four hours, fifteen ounces seven drachms, or more than a pound and a quarter of solid materials. Dr. Garrod, after analysing the urine in several cases of diabetes, found the daily quantity of sugar to vary from half a pound to a pound and three quarters.

It is most abundant three or four hours after a full meal, and least abundant when the secretion takes place at the time most remote from the influence of food. We need not then be surprised at the hunger, the wasting, the hectic fever, the feeling of emptiness and sinking at the stomach, the debility, the chilly state of the body, and especially of the extremities, the aching and sense of weariness in the loins and legs, the aversion to exercise, the loss of virility, all of which symptoms are generally present. I may add, to complete the picture, some others enumerated by Dr. Watt, and confirmed by Dr. Prout, and consistent with my own experience of the disease. They are uneasiness in the stomach after meals, flatulence and acid eructations, dimness of vision, redness of the whole interior of the mouth, sponginess of the gums, looseness of the teeth, and some degree of irritation and inflammatory redness about the external orifice of the urethra: these last are symptoms noticed in persons dying of inanition. Again: listlessness and depression of spirits, weakness and peevishness of temper—the once vigorous mind becomes feeble, oblivious and vacillating—the once amiable temper, fretful, suspicious and intolerant. With all this, there is a peculiarly faint and unpleasant odour of the breath

and person. I have often recognised the complaint upon first entering the sick-chamber by this peculiar scent. Diabetes is generally a chronic disorder, creeping on at first insidiously, and spreading itself, under judicious management, over many years. Yet it is sometimes fairly entitled to be called an acute disease, for it occasionally breaks out suddenly, is attended with much febrile disturbance, and runs a short course, uncontrolled by any treatment. One such instance I have seen, and others I know of. Much more frequently it proves fatal through the supervention of some organic mischief, such as debility is calculated to foster and develop. It often becomes associated in its progress with pulmonary disease, especially with tubercular phthisis. So common is this, that some persons have thought it universal. But it is not so. I have myself witnessed more than one or two dissections of persons dead of diabetes, whose lungs did not contain a single tubercle. Sometimes the disease terminates in incurable dropsy; and sometimes the patient is cut off suddenly, either by apoplexy, or by some peculiar disorder of the stomach.

There is some kind of connection between diabetes and certain affections of the skin, and of the subjacent reticular membrane. Dr. Prout remarks, that it usually *follows* cutaneous complaints, but *accompanies* or *precedes* those which involve the areolar tissue. Persons have been known to lose chronic eruptions, upon their having an attack of diabetes. On the other hand, carbuncles and malignant boils are frequently the companions of that disorder. Dr. Garrod has found *gangrene* to be of frequent occurrence in diabetic persons: there can be no doubt that their vital power is greatly lowered by the disease. They are apt to sink rapidly under any sudden mental shock, under bodily injuries, under surgical operations, and even under unusual fatigue or anxiety.

What are the origin and source of this strange complaint? Whereabouts in the body is the sugar formed? Is it made by the kidneys from the blood? That was one of the earliest conjectures. It was naturally thought, that if the sugar pre-existed in the blood, and was only withdrawn from it by the kidneys, it would be discoverable in the blood. Yet able chemists sought for it there in vain. Hence it was inferred, that by some new combination of its elements, sugary matter was actually formed in the kidneys. The chemistry and the reasoning were both faulty. Sugar has now been detected both in venous and arterial diabetic blood. It is detected with some difficulty, partly, perhaps, because its presence is masked by the albumen of the serum, but partly because its quantity is small; and its quantity is small, because it is continually decanted out of the blood, as fast as it enters, and with it a profusion of water also, through the kidneys. In this respect the sugar and the urea are alike; they are both excretions, which the blood is in haste to cast forth. It would appear also as if the sugar necessarily carried with it a large quantity of aqueous fluid from the blood, and was simply diuretic. When the amount of sugar eliminated is diminished, as by certain remedies it may be, the quantity of urine diminishes too.

FORMATION AND GROWTH OF BONES.

(Concluded from page 372.)

The internal periosteum is that membrane which surrounds the marrow, and in the bags of which the marrow is formed and contained. It is more connected with the fat than with the bone; and in animals can be drawn out entire from the cavity of the bone; but its chief use is to conduct the vessels which are to enter into the substance of the bone.

The periosteum, the outer membrane of bone, which was once referred to the dura mater, is merely condensed cellular substance; of which kind of matter we now trace many varied forms and uses, for so close is the connection of the periosteum, tendons, ligaments, fasciæ, and bursæ, and so much are these parts alike in their nature and properties, that we reckon them but as varied forms of one common substance, serving for various uses in different parts. The periosteum consists of many layers, accumulated and condensed one above another: it adheres to the body of the bone by small points or processes, which dive into the substance of the outer layer, giving a firm

adhesion to it, so as to bear the pulling of the great tendons, which are fixed rather into the periosteum than into the bone. It is also connected with the bone by innumerable vessels. The layers of the periosteum nearest to the bone are condensed and strong, and take a strong adhesion to the bone, that the vessels may be transmitted safe, and the fibres of this inner layer follow the longitudinal directions of the bony fibres. The periosteum is looser in its texture outwardly, where it is reticulated and lax, changing imperceptibly into the common cellular substance. There the fibres of the periosteum assume the directions of the muscles, tendons, or other parts which run over it. Any accident which spoils the bone of its periosteum endangers the life of the bone itself. The surface of the bone becomes first affected, and then it exfoliates; the accidental wounds of the periosteum, deep ulcers of the soft parts, as on the shin, the beating of aneurisms, the growth of tumours, the pressure even of any external body, will, by hurting the periosteum, cause exfoliation.

The cartilages are also a part of the living system of the bone; and we see too well, in the question of the bones themselves, how unphilosophical it must be, to deny organisation and feeling to any part of the living body, however dead or insulated it may appear; for every part has its degree of life: the eye, the skin, the flesh, the tendons, and the bones, have successive degrees of feeling and circulation. We see, that where even the lowest of these, the bone, is deprived of its small portion of life, it becomes a foreign body, and is thrown off from the healthy parts, as a gangrened limb is separated from the sound body; and we speak as familiarly of the death of a bone, as of the gangrene of soft parts. How, then, should we deny organisation and life to the cartilages? though surely, in respect of feeling, they must stand in the very last degree.

We now understand the constitution of a bone, and can compare it fairly with the soft parts in vascularity and in feeling; in quickness of absorption; in the regular supply of blood necessary to the life of the bony system; in the certain death of a bone, when deprived of blood by any injury of its marrow, or of its periosteum, as a limb dies of gangrene, when its arteries are cut or tied; in the continual action of its absorbents, forming its cavity, shaping its processes and heads, keeping it sound and in good health, and regulating the degree of bony matter, that the composition may neither be too brittle nor too soft. From this constitution of a bone, we could easily foresee how the callus for uniting broken bones must be formed; not by a mere coagulation of extravasated juice, but by a new organisation resembling the original bone.

The primordium of all the parts of the body is a thin gelatinous-like mass, in which the forms of the parts are laid; and the preparation for healing wounds, and for every new part that needs to be formed, is a secretion of a fluid which coagulates, which is soon animated by vessels coming into it from every point. In every external wound, in every internal inflammation, wherever external parts are to be healed, or internal viscera are about to adhere, matter of this kind is secreted, which serves as a bed or nidus, in which the vessels spread from point to point, till the part is fully organised, and it is in this manner that the heart, the intestines, the testicle, and other parts, adhere by inflammation to the coats which surround them, and which are naturally loose. It is by a process not dissimilar that the broken ends of bones unite.

When we find the substance of the oldest bone thus full of vessels, why should we doubt its being able, from its own peculiar vessels, to heal a breach, or to repair any loss? How little the constitution of a bone has been understood, we may know from the strange debates which have subsisted so long about the proper organ for generating callus. Some have pronounced it to be the periosteum; others the medullary vessel, and internal membrane; others the substance of the bone itself. In the heat of this dispute, one of the most eminent anatomists produced a diseased bone, where a new bone was formed surrounding a carious one, and the spoiled bone rattled within the cavity of the sound one: here we should have been ready to pronounce, that bone could be formed by periosteum only. But presently another anatomist produced the very reverse, viz., a sound

young bone, forming in the hollow cylinder of a bone which had been long dead; where, of course, the callous matter must have been poured into the empty cavity of the spoiled bone, from the ends which still remained sound, or must have been secreted by the medullary vessels. But the truth is, that callus may be thus produced from any part of the system of a bone. If we pierce the bone of any animal, and destroy the marrow, the old bone dies, and a new one is formed around the old: if we kill the creature early, we find the new bone to be a mere secretion from the old bone; and if we wait the completion of the process, we find the new bone beautiful, white, easily injected, and thick, loose in its texture, and vascular and bloody, but still firm enough for the animal to walk upon; and in the heart of it we find the old bone, and that it has become dead and black. If we reverse this operation, and destroy the periosteum only, leaving the nutritious vessels entire, then the new bone is formed fresh and vascular by the medullary vessels, and the old one, quite black and dead, surrounds it.

The effect of injury to a living bone is very curious. But the manner in which the bone resumes its pristine form is still more worthy of observation. At first the outward exfoliation is attended with a proportionate filling up of the cavity of the bone: and the injury to the centre and body of the bone produces a new bone around the old one, and the old one at last dies, and is absorbed or discharged. But after years these changes are again reversed, and the new bone contracts its diameter, and the cavity becomes of its natural dimensions, so that the evidence of the changes which the bone has undergone are quite removed. This is a very beautiful example of the influence of that principle which controls the growth of all the parts of the body, which may have its operation deranged by violent injury or by diseases, but which will at last by slow degrees restore the part to its natural form and action.

The diseases of the bones are the most frequent in surgery; and it is impossible to express how much the surgeon is concerned in obtaining true ideas of the structure, constitution, and diseases of bones; how tedious, how painful, and how loathsome they are; how often the patient may lose his limb, or endanger his life; how very useful art is; but, above all, what wonders nature daily performs in recovering bones from their diseased state.

ORGANIC AND ANIMAL LIFE.

THE two great classes of living beings, animals and vegetables, perform two distinct sets of actions: the first set is common to all living creatures; the second is peculiar to one class: the first set is indispensable to life; the second is necessary only to one kind of life, namely, the animal. The actions included in the first set, being common to all living or organised creatures, are called ORGANIC; the actions included in the second class, belonging only to one part of living or organised creatures, namely, animals, are called ANIMAL. The ORGANIC actions consist of the processes by which the existence of the living being is maintained, and the perpetuation of its species secured: the ANIMAL actions consist of the processes by which the living being is rendered percipient, and capable of spontaneous motion. The ORGANIC processes comprehend those of nutrition, respiration, circulation, secretion, excretion, and reproduction; the first five relate to the maintenance of the life of the individual being; the last to the perpetuation of its species. The ANIMAL processes comprehend those of sensation and of voluntary motion, often denominated processes of relation, because they put the individual being in communication with the external world. There is no vital action performed by any living creature which may not be included in one or other of these processes, or in some modification of some one of them. There is no action performed by any inorganic body which possesses even a remote analogy to either of these vital processes. The line of demarcation between the organic and the inorganic world is, therefore, clear and broad; and the line of demarcation between the two great divisions of the organic world, between the inanimate and the animate, that is, between plants and animals, is no less decided: for, of the two sets of actions which have been enumerated, the

one, as has just been stated, is common to the whole class of living beings, while the second set is peculiar to one division of that class. The plant performs only the organic actions: all the vital phenomena it exhibits are included in this single circle; it is, therefore, said to possess only organic life: but the animal performs both organic and animal actions, and is therefore said to possess both organic and animal life.

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